

CHAPTER IV
RESEARCH METHODOLOGY

4.1 PROBLEM STATEMENT:

India's population is now above 135 crores, and there is high positive correlation between human population of a country and Fast-Moving Consumer Goods (FMCG). From the previous industry analysis and literature review we found that India's FMCG industry is moving from one era to another very rapidly. Before 10-15 years we could hardly find Hyper/Supermarket store in a small town of population less than 10 lac. Now we can find these stores at many places even in small towns. Thus, we have entered Modern Trade era (Hypermarket, Supermarket, Discounters, Large Grocery stores etc.). Also due to COVID 19 restrictions in many metro cities we have seen consumers moving towards e-commerce to fulfil their needs of monthly groceries.

Due to increasing importance of Modern Trade and E-commerce loyalty of FMCG consumers is at risk. Major reason behind this is consumers now have choice to select from the multiple options available for the required product. Now they can very easily compare prices, stock keeping units, packaging, promotional schemes of various brands of the same category. They are now able to make their own purchase decision. This makes brand loyalty towards specific product a weak bond which is equally dangerous for both Retailers and Manufacturers.

An ideal situation should be,

Availability of a model depicting relationship among the key variables/factors affecting the brand loyalty of FMCG consumers in Traditional Trade (small grocery shops etc.) and Modern Trade (hyper/supermarkets including E-Commerce) setup.

Also, availability of a tool using which manufacturers and retailers should get a fair idea about the brand loyalty of their brands on timely manner which may help them to take strategic decisions very quickly and to have strategic advantage over their competitors. This model should cover both behavioural aspects, situational aspects and real purchase of the consumers. Also, all size of manufacturers and retailers i.e., big, medium, and small players should get the advantage of it. This means cost of getting this information should not be very high so that only large players can afford it.

Current scenario is,

There are many models of brand loyalty created by various researchers in past, however we hardly find any work done specifically for brand loyalty which differentiate between Traditional Trade and Modern Trade/E-Commerce setup within developing country like India. It is very well-known fact that, brand loyalty parameters are changing from country to country, from market to market (e.g., Traditional Trade, Modern Trade, E-commerce, Discounters etc.) and from one situation to another (e.g., normal days, pandemic period, during natural calamities).

Even after so many technological enhancements, knowing brand loyalty of a given set of consumers is a critical challenge. There are many research companies and analytical teams of manufacturers putting lot of efforts to fuse data from multiple sources and try to get the answers to these questions. In most of the cases they only manage to get idea about the repeat purchasers and not the real brand loyal consumers. Also, it is very difficult to move one step further and to get the idea about the factors responsible for the change in brand loyalty.

Major reason behind this is, more dependency on the data collected easily by way of 'Point of Sale' (POS), and less or no data around behavioural aspects of the buyer. (POS is a data collected with the help of scanner and computer from the billing counter of Hyper/supermarket. This is more reliable data as it is created by scanning the barcode of the product.) Organizations that provide both purchase and behavioural data are charging significantly high amount to the manufacturers. This doesn't allow medium or small-scale manufacturers to get the access to such data and analysis.

Also, there is no specific list of the variables/factors impacting overall loyal behaviour of a customer towards a specific brand. There are many different models suggested by various researchers in past however the factors describing the loyal behaviour towards FMCG products in Modern Trade setup are rarely available.

Consequences of the current setup is,

In the absence of a variables/features of brand loyalty towards FMCG products in Modern Trade, it is difficult for Manufacturers to design any strategy around factors they need to put more emphasis and where to put less.

As purchase and other behavioural data together are not easily available, manufacturers are not able to get the idea about the brand loyalty of their products. In a way medium and small-scale manufacturer as well as retailers are not able to analyse the status of their brand loyal consumers and to frame business strategies accordingly. As a result of it, many times medium and small brands are either eaten away by large players or they get exit from the market in few months of the launch.

Possible solution to the above problem is,

1. Collect list of all the variables/features from the literature which are affecting brand loyalty of the FMCG products in any kind of setup.
2. Based on empirical research find out the most important ones and relationship among them.
3. Design a model using Statistical process, put it into practical usage with the help of automated tool created using different types of data and Machine Learning algorithms.
4. Put designed model into practical usage with the help of automated tool created using different types of data and Machine Learning algorithms. This would help both manufacturers and retailers to take vital business decision.

4.2 SIGNIFICANCE OF THE STUDY:

India's FMCG industry is very huge and demanding from many decades. It has grown over a period along with the entries of MNCs and development of local companies. Some of the local brands are now called global brands with their footprint in neighbouring countries. Also, this industry is changing phases rapidly from traditional trade to modern trade and to e-commerce going forward. With these changes, complexity of the market also increases in terms of demand-supply, market shares of various categories and market leaders.

This empirical research has two main objectives, 1. to build a model considering most impacting variables/features to the brand loyalty of consumers towards FMCG products selling through Modern Trade, and 2. to design a tool based on identified model that can help to know loyalty level of FMCG consumers on real time basis. Model should also help to take design strategy around maintaining brand loyalty level.

4.3 CONTRIBUTION OF RESEARCH TO EXISTING LITERATURE:

As no specific research is conducted in context of brand loyalty of FMCG products from MT market in India, this will help many people directly or indirectly. Most of the research ends with the development of model however here efforts are extended further to develop a tool which can be used in real life situation to make very vital decisions to maintain and enhance brand loyalty of the products.

4.3.1 Benefits of research to the society:

All retail consumers of the FMCG products who are purchasing products from the Hyper/supermarkets will get multiple benefits out of the research.

- As per the set up proposed in the research, they will get monetary incentive for contributing in the various parts of the research.
- They will get monetary incentive by responding to some of the research questions.
- Also, by purchasing products on regular basis from the same Modern Trade store of their choice, they will get the monetary benefit in the form of loyalty card.
- Major hidden benefit to the customers out of this process is, product offering would be more competitive in the Modern Trade. This would result in more competitive prices, discounts, promotional offers, quality of products, stock keeping units, flavours, packaging etc.

4.3.2 Benefits of research to the institutions:

- This research would provide direct benefits to both FMCG manufacturers and Modern Trade Retailers. Also, it would provide indirect benefits to the market research companies.
- FMCG Manufacturers:
 - Manufacturers who are dealing with Personal Care, Home Care, Food and Beverage categories would get direct benefits from the research.
 - Benefits of the research are not only restricted to the large players of the industry, but medium and small players can also get the advantage of it.

- They will get real time data on the brand loyalty of their products, which would help them to decide about their strategy going forward.
- Modern Trade Retailers:
 - Retailers dealing with Hyper/Supermarkets/Discounters will be able to know what is working well in their stores and what is not preferred by their regular customers. This would help them to plan their inventory accordingly.
 - Selling this information to the different manufacturers, they can generate extra revenue from it. Now a day's data (information) about product and its status is very important and producers are ready to pay a huge amount for the same.
 - Loyalty card offered to their regular customers will ensure fixed revenue from the set of customers at fixed frequency. This will reduce overall uncertainty in the business.

4.3.3 Benefits to the future studies in this field:

Once the format to evaluate most important variables/features of brand loyalty towards FMCG products in Modern Trade setup is in place, one can extend it vertically for E-commerce. E-commerce is potentially the future of India's FMCG industry.

Horizontally extension of these study can be done for the Modern Trade FMCG industry in other developing countries of the world (Sri Lanka, Nepal, Bangladesh, Myanmar, Indonesia, Pakistan etc.) after checking the hypothesis that, variables/features impacting the study are same for all developing countries.

4.4 SCOPE OF THE STUDY:

Fast Moving Consumer Goods are such products which touches everyone's life on daily basis. Without these products it is difficult to think of a life. Irrespective of rich or poor, male, or female, urban or rural person all need FMCG products on regular basis.

- In scope: Considering this fact scope of the study includes those people who can make their FMCG product buying decision independently. For this purpose, data would be collected from people living in various states of India.

As key focus is on traditional trade vs. modern trade/e-commerce, good representation of both type of buyers is ensured while data collection. Minimum age of respondent is fixed at 18 years just to make sure that questions are clear to the respondents and their responses are well supported by facts and their own buying experience. Shampoo, Washing Powder, Chocolate and Beverages are considered for model building.

- Out of scope: People from some of the states like Jammu & Kashmir, Assam, Himachal Pradesh etc. are not covered due to political/geographical challenges. Also, good balance of traditional and modern trade is considered while excluding the whole state from the scope. Minimum age of respondent is fixed at 18 years just to make sure that questions are clear to the respondents and their responses are well supported by facts and their own buying experience.

4.5 OBJECTIVES OF THE STUDY:

Key objective of the research is to study the brand loyalty parameters in fast moving consumer goods. Once most significant parameters are identified, next objective is to build a decision-making model based on it and to define the process using which model can be put into industrial use.

Below are the research objectives formed to achieve above mentioned objective:

1. To study the most impactful attitudinal antecedents defining brand loyalty of buyers in traditional and modern/e-comm trade.
2. To study the most impactful behavioural antecedents defining brand loyalty of buyers in traditional and modern/e-comm trade.
3. To study the most impactful situational antecedents defining brand loyalty of buyers in traditional and modern/e-comm trade.
4. To design decision making models of brand loyalty towards FMCG products for both traditional trade and modern/e-comm trade
5. To design machine learning/statistical process which can help retailers and manufacturers to know the status of brand loyalty for their brands on real times basis.

Details on the each of the objective mentioned above.

1. To study the most impactful attitudinal antecedents defining brand loyalty of buyers in traditional and modern/e-comm trade.

In the initial list created based on researcher's experience with the FMCG industry and literature review, 40+ attitudinal parameters are identified which could affect brand loyalty in one or the other way. Out of 40+ potential parameters, around 30 are common for both Traditional Trade and Modern Trade/E-comm, however 10 parameters are only for MT/E-comm. Data would be collected around these variables and most significantly impacting variables would be filtered out in this process. Impactful variables will be selected for the next round of analysis and model building part.

2. To study the most impactful behavioural antecedents defining brand loyalty of buyers in traditional and modern/e-comm trade.

10+ behavioural parameters are identified which could affect brand loyalty in one or the other way. Out of 10+ potential parameters, around 6 are common for both Traditional Trade and Modern Trade/E-comm, however 10 parameters are only for MT/E-comm. Data would be collected around these variables and most significantly impacting variables would be filtered out in this process. Impactful variables will be selected for the next round of analysis and model building part.

3. To study the most impactful situational antecedents defining brand loyalty of buyers in traditional and modern/e-comm trade.

2 situational parameters are identified to include situational component in the study of brand loyalty. Both these parameters would be considered for further study and model building for TT and MT/E-comm. These parameters would become a part of final model which can help to classify buyers into loyal and disloyal groups.

4. To design decision making models of brand loyalty towards FMCG products for both traditional trade and modern/e-comm trade

Based on most impactful variables selected from the previous analysis models would be build using statistical process. There would be two separate models. One for Traditional Trade and another for Modern Trade/E-comm. These models would further help to build the classification/prediction algorithms using Statistical/Machine Learning concepts.

5. To design Statistical/Machine Learning process which can help retailers and manufacturers to know the status of brand loyalty for their brands on real times basis.

Purpose here is to set up a process which can evaluate individual buyers on real time basis and show brand loyalty status of the buyers on real time. Results will be summarized at an aggregate level to have a bigger picture. Final classification would be Loyal, Disloyal, Potential Switcher etc. This classification would help retailers and manufacturers to know their brand status in terms of loyalty. This would help them to design strategy around given brand.

4.6 DEFINITION OF KEY VARIABLES/ATTRIBUTES:

1. Brand Affect: A brand's potential to elicit a positive emotional response in the average consumer because of its use.

2. Customer satisfaction: It is defined as a measurement that determines how happy customers are with a company's products, services, and capabilities. Customer learns from past purchase and define his/her behaviour accordingly. It also helps to know about word of mouth, complains and repurchase. Customer satisfaction may lead to high repurchase however it is not the only variable which can define repurchase.

3. Switching Cost: It is a cost that consumer face when he/she is switching to new brand. It may be due to high/low price of new brand or may be due to cost associated with technicality of a product (e.g., mosquito repellents are of different design and may not fit to all liquid bottles. If user wants to switch to new brand, then user may have to consider price of repellents.)

4. Brand Trust: It is a positive feeling of consumer about the product based on the experience with product. It gives sense of reliability and safety. More trustworthy brands show higher brand loyalty. Chaudhuri and Holbrook (2001), “the willingness of the average consumer to rely on the ability of the brand to perform its stated function”.

5. Relationship Proneness: It is an individual feature of the buyer which indicates, buyer’s relative stability to get engage in relationship with a given product or product category.

6. Involvement: An amount of interest that buyer shows for a certain product or brand is called involvement (Park & Young, 1983). It is a continuous commitment towards preferred brands which motivates buyer to do repeat purchase.

7. Perceived Value: It is the customer's evaluation of the benefits of a given product and the amount by which it is superior in comparison to competitor's product in terms of satisfying the needs of customer. It is measured in terms of overall amount spent, overall purpose solved, overall satisfaction level achieved and social status.

8. Commitment: An association or binding of a buyer to a specific brand within given category is called commitment. It is very important from brand loyalty point of view as high commitment implies high loyalty. Commitment indicates that buyer is already having positive attitude towards preferable brands which results in to repeated purchases.

9. Repeat Purchase: Repeat purchase of the same brand in each period is an indicator of brand loyalty. It is very important in the study of brand loyalty as it can be measured easily, and reliability is very high compared to attitudinal measures. Only challenge with repeat purchase is, it is difficult to differentiate between real loyalty and simply a repeat purchase as it may be due to unavailability or unaffordability of preferred brand.

10. Brand Relevance: It is manufacturer's ability to connect with buyer's emotions and become personally relevant to them. Sometimes new product categories are created for making brand relevant to the users. Eg. now a days different products under same brands are available for both male and female. Few such subcategories under personal care category are deodorants, bath soaps, face creams etc.

11. Brand Performance: It is brands outcome with respect to pre decided performance target. It is varying from person to person as it is highly personal.

12. Culture: It also plays vital role in defining brand loyalty. In India we are influenced by many human organizations around us. Highly impactful are family, friends, relatives, other social groups, religion, race etc. Culture always transfer knowledge, beliefs to the young generation which they carry relatively longer unless they have strong reasons to switch.

13. Price Worthiness: compared to other similar products, given product is worthy with respect to price and the benefits/satisfaction that we are getting out of it. It is a driving factor for many consumers.

14. Brand Equity: It is a commercial value that can be derived from buyer's perception of brand name of a particular product produced by manufacturer. For eg. Nestle produces noodles under the brand name of Maggi. Whatever new flavour they launch, people tend to buy it.

15. Brand Image: It is brand image as a set of beliefs, ideas and impression that a person holds regarding an object (Kotler (2001)). Also defined as a set of perceptions about a brand on consumer's memory (Keller (1993)).

16. Brand Experience: It is a long-term experience that customers have from a given brand. It includes perception, reactions, feelings. Good experience may result into brand loyalty.

17. Accessibility: How quickly positive attitude towards a product can be recalled is called accessibility. There are many strong brands in the market who often spent lot of money on advertisement. Main purpose behind it is to recall given brand to their loyal customer group and maintain consistent purchase. In hyper and supermarket, we often see posters to recall certain brands. Also, they announce product name and offers continuously which help consumers to access their good experience and repeat the purchase of same brand.

18. Habit: It is a process of repeated buying number of times over an extended period without getting influenced by other factors of environment and without processing information about familiar product in detail. Habitual buying behaviour always helps to create brand loyalty towards given products.

19. Brand Reputation: It is nothing but a perception towards brand showcased by key stakeholders like customers, employees, other partners, society etc. Strong reputation indicates strong brand loyalty. It is very important to maintain and enhance brand reputation overtime. A small miss may result in a big loss in the form of declining loyal customer base.

20. Religion: In India various religions are practiced by different group of people. Different religions have different cultural values. People from different religions

follow their specific cultural values and show their buying behaviour accordingly. Product having Nonveg content or sometime onion and garlic content are not preferred by certain group of people. It is very important to evaluate role of religion and its value sets on the buying pattern of a consumer.

21. Brand Credibility: It is defined based on Trustworthiness and brand expertise (Erdem and Swait, 2004). High brand credibility increases chances of high brand loyalty. Those brands which are in market for more than 100 years are already enjoying credibility. However, for relatively new brands, managing credibility is little different and challenging. New brands must collect feedback on regular basis and work on improvement areas, need to create transparency and always try to deliver quality products. Now a days due to social media platforms one can acquire feedback and views of the consumers very easily. Analysing them and finding out improvement areas is equally important.

22. Brand Awareness: How much or how quickly consumer recognize the brand is called brand awareness. Brand awareness is a key step in the direction of brand loyalty. In marketing literature, brand awareness is divided in three major types called Brand Recall, Brand Recognition and Brand Dominance.

23. Emotional Value: It is a value that user finds in a product beyond functional value of the product is referred to as Emotional Value. It is at higher level when consumer find it as monetary worth. High emotional value leads to high brand loyalty in many cases.

24. Celebrity Influence: Celebrity can make positive influence on the consumers in terms of creating larger group of brands loyal or repeat customers. In many cases it is evident that consumers do follow their favourite celebrities while selecting brands. In FMCG there is greater chance of celebrity influence as these products can easily be switch/change over short period. Only challenge with such influence is, if there is any negative news about celebrity then it may create serious negative impact on the loyal consumer base.

25. Functional Value: It is the perceived utility derived from an alternative's capacity for functional, utilitarian, or physical performance (Sheth, Newman & Gross, 1991). High functional value helps to increase loyalty level of a product.

26. Brand Attitude: It is nothing but consumer's attitude towards given brand. Brand loyalty study is mostly centered around two key variables 1. Consumer Attitude 2. Consumer Behaviour. Consumer behaviour is easy to measure as it is based on real purchase. However, consumer attitude is difficult to measure as it depends on various features and most of these features are related to psychological/emotional part of consumer's behaviour.

27. Brand Market Share: Many research papers indicates that brand loyalty is affected due to many positive effects of brands overall commercial performance. One of the key performance indicators of brand's commercial performance is market share. Higher market share helps to increase brand loyalty and vice versa is also true (Moisescu, Ovidiu & BERTONCELJ, Andrej. (2010)).

28. Centrality: It is related to the value system of an individual. When individual's value system matches with attitude towards the products/services then it helps to make loyalty as a strong bound.

29. Clarity: A very clear attitude of a buyer is strongly associated with loyalty. Buyer with clear attitude has clear preference of one or two brands from the set of many brands. Inverse is the situation where buyer with low attitude has varying preference and loyalty bound is weak.

30. Family Influence/Social Value: India is a country where family values and set up is still playing an important role in any kind of decision making. In India we can largely observe Nuclear and Joint families. In both the setups there is a decision maker whose views are considered largely while buying something. So, it is always beneficial to evaluate the behaviour of decision maker. Apart from family, in many cases decisions are influenced by relatives, friends and neighbours.

31. Availability: Required product is available in each shop or not is a key factor for change in the buying behaviour of consumer. As FMCG products are low risk products, sometimes due to unavailability of a given brand buyer may switch to any other brand. Temporary switch is not very harmful but permanent switch can cause business loss.

32. Situational Factors: Sometimes due to natural calamities or pandemics buyer shows different behaviour. Such situations may impact the loyal behaviour of a buyer and may cause permanent shift.

33. Discounts: Price reduction or more quantity at same price are the ways of providing discount to the buyer. It can play a vital role in manipulating brand loyalty. Buyers may tend to get the advantage of such discounts and show different behaviour.

34. Advertising: Advertising can serve multiple objectives. For popular brands it serves the purpose of recall whereas for new brands it spread awareness. Advertising can also help in spreading the message of discounts or more quantity at same prices. Now a days comparison with close competitor is also possible through advertisement.

35. Personal Selling: In hyper/supermarkets many times companies are placing their people to market their products. These people help customer to know all distinct features of the product. This helps to manipulate buyer's decision.

36. Comparing Product Features: Major difference between traditional trade shops and hyper/supermarkets is, in hyper/supermarkets buyers get an opportunity to compare multiple products of same category. They can make comparison in terms of Stock Keeping Unit, Price, Flavor, Quantity etc. This gives them enough opportunity to evaluate product from multiple angles and make right choice. This could vary brand loyalty of a consumer so often.

37. Assortment/Gift Pack/Banded Pack: Mostly in hyper/supermarkets buyers can find assorted packs which gives various flavours of the same brand in one pack. For eg. Coca Cola has its multiple brands in single pack. Also, such packs are available at lower price compared to buying individual products. Gift packs and banded packs also serves the similar purpose. Opportunity of buying such packs may affect loyalty of buyers in both short and long run.

38. Product Placement: Product placement in hyper/supermarket or on E-commerce platforms always force buyer to evaluate other options before making real purchase of the product. Multiple brand's products are on the shelf, and they are kept side by side in hyper/supermarkets. In E-commerce if buyer searches for a particular brand, then multiple brands are appearing on buyer's screen which forces buyer to select from multiple brands. Brand loyalty remains at risk in such situation.

39. Proportion of Purchase: Within a given category, how much amount one spends on a specific brand is a good indicator of brand loyalty. High proportion spend on a single brand indicates more loyalty towards that brand.

40. Count of Acceptable Brands: In FMCG it is very likely that person prefers more than one brand. This shows brand loyalty towards multiple brands. While deciding about most preferred brands, buyer always find distinction among them which is varying from most preferred to not at all preferred. Getting knowledge around count of acceptable brands, chances of brand switching can be accessed.

41. Sequence of Purchase: In what sequency an individual is buying FMCG brands can give significant information about brand loyalty. There are various combinations possible, and each combination highlights specific characteristics of an individual.

42. Tried Out Brands: It is a count of different brands that are tried out by an individual in last 8 months. Highet count indicates lower bound of loyalty and reverse is also true.

4.7 HYPOTHESIS OF THE STUDY:

Following are the hypothesis formed for evaluating above mentioned objectives.

H0: Attitudinal antecedents under study have no impact on brand loyalty of buyers in traditional and modern/e-comm trade.

agH1: At least few attitudinal antecedents under study have impact on brand loyalty of buyers in traditional and modern/e-comm trade.

H0: Behavioural antecedents under study have no impact on brand loyalty of buyers in traditional and modern/e-comm trade.

agH1: At least few behavioural antecedents under study have impact on brand loyalty of buyers in traditional and modern/e-comm trade.

H0: Situational antecedents under study have no impact on brand loyalty of buyers in traditional and modern/e-comm trade.

agH1: At least few situational antecedents under study have impact on brand loyalty of buyers in traditional and modern/e-comm trade.

4.8 RESEARCH DESIGN:

Exploratory research has been conducted here to identify the most impactful variable to the overall brand loyalty of consumers towards FMCG products. Primary method of research is used to conduct the overall research. Survey/interview method used to collect major part of data.

4.8.1 Source of data:

Both primary and secondary data used for the research. Major weightage is on primary data around buyer's preferences toward FMCG products.

Primary data: It is collected through structured questionnaire using all close ended questions. Any FMCG product users having age greater than 18 years was eligible to provide responses. Primary data collected around demographics of respondents, respondents' preferences towards behavioural and attitudinal variables/attributes and some general information about buying preferences of respondents towards FMCG channels, Categories and Brands.

Secondary data: Secondary data is collected in two different ways. 1. From research papers to get some idea about previously designed models and previously evaluated brand loyalty parameters. Many such research papers are studied and details of them are noted under literature review. 2. From open web resources many important charts and secondary data points collected just to know the overall size of FMCG industry and categories within it. Some of these data points are also indicating the forecasted values of different categories.

4.8.2 Sampling and data collection:

Use of proper sampling method is very vital to get good quality estimates of population parameters. In case of wrong method of sampling or insufficient sampling, entire analysis and conclusions drawn based on it may go wrong. Keeping these points in mind, ‘Three stage probability sampling’ is used for this research purpose. Details of sampling units and method applied to collect sample in each stage is as below.

Sampling Process 1: Including only Urban areas for Modern Trade, E-Commerce, and Traditional Trade buying behaviour. **Table 4.1 Stages of Sampling – Urban Areas**

Sampling Stage	Type of Sample Unit	Sampling Unit	No. of Units	Data Collection Method
Stage 1	States (28) & Union Territories (8)	State/UT	27 Selected as per the nature of study	Cluster Sampling
Stage 2	Big cities withing States and Union Territories having Modern Trade and E-Commerce facility	Big Cities	498	Cluster Sampling
Stage 3	Total People in States/UTs (Urban)	Individuals	37,71,06,125	Simple Random Sampling Without Replacement

	People having age above 18 years from selected States/UTs -> Big cities	Individuals	26,02,03,226	Simple Random Sampling Without Replacement
--	---	-------------	--------------	--

For detailed data on Sampling Units of all three stages, please refer to Table 4.1 and 4.2.

Process Steps:

1. All sampling units of first two stages are numbered so that they can be selected using random numbers generated through software. For this purpose 27 States + UTs and 498 big cities, in these states are numbered from 1,2,3,...., so on.
2. Units from third stage are selected at random as per the availability of respondent as it is not possible to number all of them.
3. Selection of Cities within states is as follows. Only those Cities are preferred where all channels i.e. Traditional Trade, Modern Trade and E-Commerce are available.
4. Individuals having age > 18 years and literate are selected at random from selected Cities.
5. Pilot study was conducted using research questionnaire. Basic understanding of each question is evaluated in this process. Also 171 responses are collected using pilot study.
6. Data collected from respondents for all three categories, Shampoo, Detergent and Chocolate & Soft drinks is used for estimation of population parameters.
7. Below are the notations used to indicate different stages of sample.

N = Total number of first stage units in the Population = 37, however number reduced to 27 as 10 can be excluded as per the nature of study

n = Number of first stage units selected in the sample = 9 (Calculated based on formula. Details mentioned below.)

M_i = Number of second stage units in the i^{th} first stage unit. $i = 1,2,3 \dots N$

m_i = Number of second stage units selected in sample from i^{th} first stage unit.
 = 5 to 6 Cities from each selected states/UTs.

B^{ij} = Number of third stage units in the j^{th} second stage unit and i^{th} first stage unit

b^{ij} = Number of third stage units selected from j^{th} second stage unit and i^{th} first stage unit

8. Selection of states/UTs from the list of 27 qualified states/UTs. For qualification purpose states/UTs.

Stage 1: States & UTs		
Total States & UTs	Population Size (N)	Sample Size (n)
37	27	9

9 States + 1 UT are selected in

the first stage. This number help to select second stage sampling units.

9. Selection of big cities in each State/UTs

Stage 2 : Districts		
Sampled States (As per stage 1)	Population Size (N)	Sample Size (n)
Delhi	15	5
Gujarat	30	6
Karnataka	26	6
Madhya Pradesh	32	6
Maharashtra	44	6
Punjab	17	5
Rajasthan	29	6
West Bengal	61	6
Dadra & Nagar Haveli/Diu & Daman	14	5

Stage 3.1: Respondents											
State + UT	District	Major City	TRU	No_HH	OT_Population	Population above 18 years	Confidence Level (Z)	Margin of Error (e)	Population Proportion (p)	Infinite Population	Finite Population
25	494	Diu	Urban	5249	23991	16554	85%	15%	50%	23	23
25	495	Daman	Urban	42963	158860	109613	85%	15%	50%	23	23
26	496	Dadra & Nagar Haveli	Urban	40364	160595	110811	85%	15%	50%	23	23
7	90	North West	Urban	695753	3442589	2375386	85%	15%	50%	23	23
7	92	North East	Urban	402187	2220097	1531867	85%	15%	50%	23	23
7	96	West	Urban	532051	2536823	1750408	85%	15%	50%	23	23
7	97	South West	Urban	467117	2149282	1483005	85%	15%	50%	23	23
7	98	South	Urban	571676	2719736	1876618	85%	15%	50%	23	23
24	474	Ahmadabad	Urban	1281652	6063047	4183502	85%	15%	50%	23	23
24	476	Rajkot	Urban	471625	2214050	1527695	85%	15%	50%	23	23
24	477	Jamnagar	Urban	200638	971065	670035	85%	15%	50%	23	23
24	479	Junagadh	Urban	179624	906412	625424	85%	15%	50%	23	23
24	481	Bhavnagar	Urban	236235	1182401	815857	85%	15%	50%	23	23
24	486	Vadodara	Urban	459506	2065771	1425382	85%	15%	50%	23	23
24	492	Surat	Urban	1063520	4849213	3345957	85%	15%	50%	23	23
24	473	Gandhinagar	Urban	127996	600627	414433	85%	15%	50%	23	23
24	482	Anand	Urban	129947	634987	438141	85%	15%	50%	23	23
24	488	Bharuch	Urban	116185	524959	362222	85%	15%	50%	23	23
24	491	Valsad	Urban	147455	635501	438496	85%	15%	50%	23	23
29	572	Bangalore	Urban	2180638	8749944	6037461	85%	15%	50%	23	23
29	575	Dakshina Kannada	Urban	214490	996086	687299	85%	15%	50%	23	23
29	577	Mysore	Urban	294016	1245413	859335	85%	15%	50%	23	23
23	435	Ujjain	Urban	152488	779213	537657	85%	15%	50%	23	23
23	439	Indore	Urban	490140	2427709	1675119	85%	15%	50%	23	23
23	444	Bhopal	Urban	408747	1917051	1322765	85%	15%	50%	23	23
23	451	Jabalpur	Urban	301662	1440034	993623	85%	15%	50%	23	23
23	421	Gwalior	Urban	239351	1273792	878916	85%	15%	50%	23	23
3	37	Jalandhar	Urban	247953	1161171	801208	85%	15%	50%	23	23
3	41	Ludhiana	Urban	436030	2069708	1428099	85%	15%	50%	23	23
3	48	Patiala	Urban	158036	763280	526663	85%	15%	50%	23	23
3	49	Amritsar	Urban	273905	1334611	920882	85%	15%	50%	23	23
8	110	Jaipur	Urban	669293	3471847	2395574	85%	15%	50%	23	23
8	113	Jodhpur	Urban	234790	1264614	872584	85%	15%	50%	23	23
8	119	Ajmer	Urban	201088	1035410	714433	85%	15%	50%	23	23
8	127	Kota	Urban	245150	1176604	811857	85%	15%	50%	23	23
19	338	Hugli	Urban	505943	2128499	1468664	85%	15%	50%	23	23
19	342	Kolkata	Urban	1024928	4496694	3102719	85%	15%	50%	23	23
19	335	Bardhaman	Urban	659366	3078299	2124026	85%	15%	50%	23	23
27	515	Aurangabad	Urban	330965	1620170	1117917	85%	15%	50%	23	23
27	516	Nashik	Urban	545577	2597373	1792187	85%	15%	50%	23	23
27	517	Thane	Urban	1987566	8514678	5875128	85%	15%	50%	23	23
27	518	Mumbai Suburban	Urban	2105604	9356962	6456304	85%	15%	50%	23	23
27	519	Mumbai	Urban	674339	3085411	2128934	85%	15%	50%	23	23
27	521	Pune	Urban	1371531	5751182	3968316	85%	15%	50%	23	23
27	505	Nagpur	Urban	701547	3178759	2193344	85%	15%	50%	23	23

Table 4.2 Respondents by States and UT and sample size

From 9 States/UTs, 5-6 big cities are selected. Total big cities selected are 45.

10. Selection of individual respondents from the selected cities in the second stage.

Stage 3: Respondents

All respondents are selected from those cities where Modern Trade, Traditional Trade and E-Comm are available.

* Few adjustments are made for Metro cities to collect more data points. Number of respondents are added to metro cities compared to the one suggested by formula. Same amount is reduced from Dadra & Nagar* Haveli/Diu & Daman.

From 9 States/UTs and 5-6 big cities from each States/UTs 1037 respondents are selected to collect data through structured questionnaire.

11. Selection of individual respondents from the selected cities in the second stage.

Stage 4: Respondents

All respondents are selected from those villages which are nearby big cities. Focus here is to get data on those consumers who are only buying from Traditional Trade Stores.

Table 4.1.1 Stages of Sampling – District - Rural Areas

Sampling Stage	Type of Sample Unit	Sampling Unit	No. of Units	Data Collection Method
Stage 1	States (28) & Union Territories (8)	State/UT	27 Selected as per the nature of study	Cluster Sampling
Stage 2	Districts – Rural Areas withing States and Union Territories having only Traditional Trade shops of FMCG	Rural Area within District	640	Cluster Sampling
Stage 3	Total People in Districts – Rural Areas	Individuals	83,37,48,852	Simple Random Sampling Without Replacement
	People having age above 18 years from selected States/UTs -> District – Rural Areas	Individuals	57,52,86,707	

Sample Size Determination

$$n_0 = \frac{Z^2 pq}{e^2}$$

e =	0.15	Margin of error allowed
p =	0.50	Eligible respondents
q =	0.50	Not eligible respondents
Z =	0.85	Std. Normal Value
n ₀ =	To find out	Sample size for given cluster

Stage 3.2: Respondents											
State + UT	District	Major City	TRU	No_HH	TOT_P	Population above 18 years	Confidence Level (Z)	Margin of Error (e)	Population Proportion (p)	Infinite Population	Finite Population
25	494	Diu	Rural	5331	28083	19377	85%	15%	50%	23	23
25	495	Daman	Rural	7413	32313	22296	85%	15%	50%	23	23
26	496	Dadra & N	Rural	36094	183114	126349	85%	15%	50%	23	23
24	469	Banas Kan	Rural	478438	2705591	1866858	85%	15%	50%	23	23
24	472	Sabar Kan	Rural	406039	2064869	1424760	85%	15%	50%	23	23
24	479	Junagadh	Rural	347702	1836670	1267302	85%	15%	50%	23	23
24	483	Kheda	Rural	359691	1776276	1225630	85%	15%	50%	23	23
24	484	Panch Mal	Rural	378648	2055949	1418605	85%	15%	50%	23	23
24	485	Dohad	Rural	298702	1935461	1335468	85%	15%	50%	23	23
24	486	Vadodara	Rural	417600	2099855	1448900	85%	15%	50%	23	23
27	499	Jalgaon	Rural	624570	2887206	1992172	85%	15%	50%	23	23
27	516	Nashik	Rural	677310	3509814	2421772	85%	15%	50%	23	23
27	517	Thane	Rural	541599	2545470	1756374	85%	15%	50%	23	23
27	521	Pune	Rural	779972	3678226	2537976	85%	15%	50%	23	23
27	522	Ahmadnag	Rural	739083	3630542	2505074	85%	15%	50%	23	23
27	526	Solapur	Rural	593560	2918665	2013879	85%	15%	50%	23	23
27	530	Kolhapur	Rural	568519	2645992	1825734	85%	15%	50%	23	23
19	333	Murshidab	Rural	1286200	5703115	3935149	85%	15%	50%	23	23
19	335	Barddham	Rural	1071561	4639264	3201092	85%	15%	50%	23	23
19	337	North Twe	Rural	993234	4277619	2951557	85%	15%	50%	23	23
19	343	South Twe	Rural	1298259	6074188	4191190	85%	15%	50%	23	23
19	344	Paschim M	Rural	1142875	5190771	3581632	85%	15%	50%	23	23
19	345	Purba Mec	Rural	988784	4503161	3107181	85%	15%	50%	23	23
8	104	Alwar	Rural	511517	3019728	2083612	85%	15%	50%	23	23
8	105	Bharatpur	Rural	338689	2053363	1416820	85%	15%	50%	23	23
8	110	Jaipur	Rural	507803	3154331	2176488	85%	15%	50%	23	23
8	112	Nagaur	Rural	476736	2670539	1842672	85%	15%	50%	23	23
8	113	Jodhpur	Rural	414223	2422551	1671560	85%	15%	50%	23	23
8	115	Barmer	Rural	418990	2421914	1671121	85%	15%	50%	23	23
8	130	Udaipur	Rural	495973	2459994	1697396	85%	15%	50%	23	23
3	35	Gurdaspu	Rural	312300	1639004	1130913	85%	15%	50%	23	23
3	38	Hoshiarpu	Rural	264831	1251656	863643	85%	15%	50%	23	23
3	41	Ludhiana	Rural	280796	1429031	986031	85%	15%	50%	23	23
3	43	Firozpur	Rural	276967	1476518	1018797	85%	15%	50%	23	23
3	48	Patiala	Rural	214257	1132406	781360	85%	15%	50%	23	23
3	49	Amritsar	Rural	214993	1156045	797671	85%	15%	50%	23	23
3	53	Sangrur	Rural	217864	1139204	786051	85%	15%	50%	23	23
29	555	Belgaum	Rural	719233	3568466	2462242	85%	15%	50%	23	23
29	557	Bijapur	Rural	309751	1675353	1155994	85%	15%	50%	23	23
29	565	Bellary	Rural	295258	1532356	1057326	85%	15%	50%	23	23
29	571	Tumkur	Rural	497521	2079902	1435132	85%	15%	50%	23	23
29	577	Mysore	Rural	406952	1755714	1211443	85%	15%	50%	23	23
29	579	Gulbarga	Rural	312880	1730775	1194235	85%	15%	50%	23	23
7	90	Northwest	Rural	40500	213950	147626	85%	15%	50%	23	23
7	91	North	Rural	3312	17746	12245	85%	15%	50%	23	23
7	92	Northeast	Rural	3938	21527	14854	85%	15%	50%	23	23
7	97	Southwest	Rural	27322	143676	99136	85%	15%	50%	23	23
7	98	South	Rural	2457	12193	8413	85%	15%	50%	23	23

Table 4.3 Respondents by Rural Areas and sample size

* Few adjustments are made for villages to collect more data points. Just to make sure data collected is complete.

From villages near by 48 big cities/towns, 1106 respondents are selected to collect data of their buying behaviour towards FMCG products.

4.9 RESEARCH INSTRUMENT:

For primary data collection purpose, structured questionnaire used with all closed ended questions. Respondents just need to provide their inputs either in paper or in soft copy of questionnaire. It was not possible to prepare Google form for online data collection as there were few questions which were asking respondents to provide list of their favourite brands etc.

Data collected using interview method. Before collecting any data, most of the questions were explained to the respondents and then data collected from them. 38 questions were asked to collect respondents view about different Brand Loyalty parameters. Five-point Likert Scale is used to collect data on attributes (non-measurable quantities). 1 indicates 'Strongly Disagree' and 5 indicates 'Strongly Agree'. Copy of questionnaire is attached in the report.

4.10 PILOT STUDY:

Pilot study was carried out to check the nature of questions asked in the questionnaire. Some of the jargons used in the questionnaire were replaced with easy words. Also, few questions were modified such that respondents can understand them easily.

Pilot study also helped to collect initial data and to know the overall average and amount of variation in it. To check the reliability and consistency of data collection instrument, Cronbach's Alpha coefficient was calculated which turned around 0.875 which indicates that questionnaire was valid and reliable for data collection.

4.11 ADMINISTRATION OF QUESTIONNAIRE:

Data collected as per the sampling plan described under 'Sampling and data collection'. Final sampling units i.e. individual respondents were selected at random as it was not possible to number them. Following points were considered while collecting data.

- Incomplete questionnaires were replaced with complete one.
- To check overall inputs, few checks were incorporated in the questionnaire itself. Using those check some of the responses were rejected.
- Both hard and soft copies of responses were summarized in excel file for further data cleaning and analysis.