CHAPTER III

REVIEW OF THE LITERATURE
3. REVIEW OF THE LITERATURE

3.1 Introduction:

The researcher has studied and analysed around 200 research papers, journals and books with respect to Consumer Adaptability for Non-Conventional Source energy as compared to Conventional energy source and related to Consumer Adaptability, from National, International Journals, conferences, books and various report of TERI, MSEB, MEDA, Maha-urja, Maha-jenco and MNRE. The Researcher has taken extensive data from the websites and blogs of many organizations who were connected with Consumer adaptability for Non-Conventional source of energy in different ways like Training, consultancy and Research. The literature Reviewed can be classified into Books, Research Papers from India, Research paper and journals from overseas, case studies and articles / papers available on websites and blogs.

“Products and the process by which they are adopted are among the most actively researched topic in marketing and the social sciences in terms of the number of publications.” Explained by Rogers, 1983. “Such attention appears well warranted given the role which new product diffusion plays changes in both consumer consumption activity and in society itself”, said by Schumpeter, 1934. Furthermore, “new product diffusion plays critical role in the performance of individual firms, a stream of successful new products is essential for business continued prosperity in a free economy”.

“The Adoption process is the “mental and behavioral sequences through which the consumer progress and which may result in acceptance and continued use of a product or Brand”, Roger and Shoemaker, 1974. “It Encompass four components: 1) an Innovation, 2) which is communicated through certain channels, 3) over time, 4) among members of a social system”, explained by Rogers and Shoemaker, 1971. Although component of time has received minimal attention in this body of research. Mittelstaedt, Grossbart, Curtis and DeVere noted that since “time is of Paramount concern, it would seem that the most obvious question is not ‘Who passes through the adoption process’ But How do individuals vary in their decision behavior over time”.

India is country with high population and land area. India has three seasons’ summer, winter, and Monsoon. India is heavily inhabited & has great solar insolation, it is perfect blend for
using solar power in India. Wind energy installation and generation India is leader. In solar area there are some large solar energy projects are proposed to install. Indian government under control of energy minister and prime minister some initiative has been taken to overcome energy crunch in India. Solar energy source is environment friendly and pollution free option in India. It helps to remove energy crunch in India. Government planned to install some solar rooftop schemes in rural and urban India to overcome energy crunch problem. Government has given various state specific subsidy schemes to install solar energy projects. Government aims to providing the various subsidy schemes for the non-conventional energy source especially for Solar Water heater and solar roof-top schemes. Solar Source is abundant and pollution free need to utilize and upgrade as per requirement of society.

India is planning to promote non-conventional energy source to generate 20 GW of solar energy by 2020. Beneath the proposal, the proposal it is compulsory to installation, use and application of solar energy equipment in government offices, hospitals and hotels. Under national Solar mission and national action plan on climate change, with plan to generate 10,000 MW of power.

Year on year new plan are prepared from ministry of non-conventional sources and prime minister of India to promote the non-conventional energy source in India. India is country which one is facing problem of the energy crunch by use of solar equipment India wanted to overcome this problem. First thing is higher price of solar PV cells, which is not affordable every person in India. Rising cost of the solar grid in India. Government is supporting the with various subsidy schemes for solar energy equipment installation and adoption in urban and rural India. There is huge disparity in between demand and supply of electricity in India. But Electricity deficit is there to overcome this problem we have to install more and more solar equipment in India i.e. Solar rooftop and solar farming projects. Few important literatures from each of the above groups are taken for discussion in this presentation. Indian government is planned to install world largest Solar power project in India.

3.2 Consumer and Customer

Definition of Customer

By Customer, we mean a person who buys the goods or services and pays the price thereof. The word customer is derived from the term ‘custom’ which means ‘practice’, so the word
customer means the individual or entity who purchases product or services from a seller at regular intervals. It can also be known as client or buyer. They are divided into two categories:

**Trade Customers**: The customers who purchase goods in order to add value and resell them. These include Manufacturers, Wholesalers, Distributors, and Retailers etc.

**Final Customer**: They are the customers who purchase it either for their own use or to hand over it to the final user.

The customers are regarded as the king, in every business because they help in earning revenue. The businesses focus on converting shoppers into buyers. They also attempt have made maintain good association with the consumers in direction to keep the business going.

Below given are the three kinds of customers:

Former customers or ex-customers

Existing customers

Prospective customers

**Definition of Consumer**

We define consumer, as a person who is the end user of the product. The word consumer is made from the word ‘consume’ which means ‘to use’. In this way, the word consumer means a person who purchases the product or service for his own use or consumption.

As per the Consumer Protection Act, 1986, it does not include the person who purchases the commodity for the purpose of adding value or resale for any commercial purpose. However, a person can use those goods or services to earn livelihood or self-employment. Any type of user, other than the buyer who purchases goods, consumes the goods by taking permission of the buyer will also come under the category of Consumer. It includes the person who avails the services for any consideration. Moreover, the beneficiary of such services will also be regarded as the consumer. There are three Consumer protection council in India:

At national level: Central Protection Council
At state level: State Protection Council

At district level: District Protection Council

**Customer and Consumer Comparison Chart**

<table>
<thead>
<tr>
<th>Basis for Comparison</th>
<th>Customer</th>
<th>Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning</td>
<td>The purchaser of goods or services is known as the Customer.</td>
<td>The end user of goods or services is known as a Consumer.</td>
</tr>
<tr>
<td>Resell</td>
<td>A customer can be a business entity, who can purchase it for the purpose of resale.</td>
<td>No</td>
</tr>
<tr>
<td>Purchase of goods</td>
<td>Yes</td>
<td>Not necessary</td>
</tr>
<tr>
<td>Purpose</td>
<td>Resale or Consumption</td>
<td>Consumption</td>
</tr>
<tr>
<td>Price of product or service</td>
<td>Paid by the customer</td>
<td>May not be paid by the consumer</td>
</tr>
<tr>
<td>Person</td>
<td>Individual or Organization</td>
<td>Individual, Family or Group of people</td>
</tr>
</tbody>
</table>

The following are the major differences between Customer and Consumer:

1. The person who buys the goods or services from a seller is known as the Customer. The person who uses the goods or services is known as a Consumer.
2. The customer is also known as buyer or client whereas the Consumer is the ultimate user of the goods.
3. The customer can be an individual or a business entity while a Consumer can be an individual or a family or a group of people.
4. Customer pays the price of the product or service however he may recover it from the other party, in case if he had purchased it on behalf of any person. Conversely, Consumer not necessarily pays the price of the product, like in case the goods are gifted or if they are purchased by the parents of a child.
5. The customer purchases the goods for the purpose of resale or to add value or for his personal use or on behalf of another person. In contrast to Consumer, who purchases the goods for the purpose of consumption only.

**Consumerism**

Many of you might be familiar with the derogatory definition of consumerism, which is the preoccupation of society with the acquisition of consumer goods. The term **consumerism** also means an organized way to protect consumers from company policies and products that violate consumer rights, and that's what we'll be talking about here. It is a societal issue of the non-market environment, where government is tapped to create and enforce laws that will safeguard consumers from unethical business practices.

How did the idea of consumerism develop? Consumers were once trustful of business, but companies have not always been ethical and treated consumers ethically. For example, the manufacturers of cigarettes have been accused of knowing that their products are addictive and can kill their consumers. Consumers soon grew disenchanted with business and felt that they needed protection.

**3.3 Consumer Behaviour**

Consumer behaviour is the process of identifying, understanding, knowing, judging what things are importantly considered for the buying the particular products and services. Many times consumers are with same need and requirements and having unique choices of the products and services means both the consumers and products are unique. Sometimes having varied and diverse need and wants from each-others. But their consumption patterns have different. The market is huge at market place Company wanted to satisfy need, want and requirements of the marketers through offering products and services. Consumer always apply their knowledge to choose the product and service. Competitors always create products innovative to satisfy the need and want of marketer. In some cases of products company gives offers to catch and understand consumer’s behaviour. It is process of understanding the Behaviour of the consumer in all aspects to understand consumer behaviour satisfy their need and wants through products.
Definition:-
Consumer Behaviour: - “The interplay of forces that takes place during a consumption process, within a consumers’ self and his environment. - this interaction takes place between three elements viz. knowledge, affect and behaviour; - it continues through pre-purchase activity to the post purchase experience; - it includes the stages of evaluating, acquiring, using and disposing of goods and services”.

It also include the personal, household, group, industrial and corporate consumers.

“The behaviour that consumers display in searching for, purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs.”
- Schiffman and Kanuk

“…..the decision process and physical activity engaged in when evaluating, acquiring, using or disposing of goods and services.”
- Loudon and Bitta

“The study of consumers as they exchange something of value for a product or service that satisfies their needs”
- Wells and Prensky

“Those actions directly involved in obtaining, consuming and disposing of products and services including the decision processes that precede and follow these actions”.
- Engel, Blackwell, Miniard

“the dynamic interaction of effect and cognition, behaviour and the environment by which human beings conduct the exchange aspects of their lives”
- American Marketing Association

3.4 Consumer Adaptability

It focuses on the stages through which individual consumer passes when deciding to accept or reject a new product. In case of Non-Conventional energy sources consumer not easily adopting as compared to Conventional Energy source. It is true that as Invention come true new technology like Bulb invention by Thomas Edison consumer started adopting new Technology. It was ancient time when consumer were using Non-Conventional energy sources as days passes consumer started using Conventional energy sources. These
Convention sources become Non-Conventional. But now a days as cost of adoption of conventional energy sources goes on increase people are attracted towards Non-Conventional energy Sources. Scarcity of Conventional energy source is there in market so consumer started using Non-Conventional energy sources. Non-Conventional source of energy help to save time, money and energy.

3.5 Consumer Rejection:-

Consumer adoption process involve five step adoption process start with awareness, Interest, Evaluation, Trial, adoption or Rejection. If consumer don’t adopt it then he reject it. Process through which consumer going to reject product or service is rejection process. Process where when he rejects the product is known as rejection process.

Another explanation is that the customer moves from a cognitive state (being aware and informed) to the emotional state (liking and preference) and finally to the behavioral or conative state (deciding and purchasing). Also called adoption process. See also adopter categories. Rejection is appositive to adoption. After rejection customer find next alternative.

3.6 Consumer Adoption Process

Consumer Adoption Process: - adoption

Ability of an entity or organism to alter itself or its responses to the changed circumstances or environment. Adaptability shows the ability to learn from experience, and improves the fitness of the learner as a competitor.

Five-stage mental process all prospective customers go through from learning of a new product to becoming loyal customers or rejecting it.

It focuses on the stages through which individual consumer passes when deciding to accept or reject a new product. There are five stage of Consumer adoption process as follows,

6. Awareness: prospects come to know about a product but lack sufficient information about it;
7. Interest: they try to get more information;
8. Evaluation: they consider whether the product is beneficial;
9. Trial: they make the first purchase to determine its worth or usefulness;
10. Adoption/Rejection: they decide to adopt it, or look for something else.
1. **Awareness:** Awareness in which every individual person comes to know about new invention about new idea and new product and service. Person has knowledge about the invention from many source of information as college friends, neighbours, co-workers, commercial sources etc. Person learn about the knowledge of invention from either source of information. This shows that his knowledge about new invention limited to the extent of info created by the source of material evidence from where he first learns about the new inventions.

2. **Interest:** After awareness stage the buyer feel motivated and is fascinated in the innovation to seek more info in terms of its effectiveness characteristics, its performance, and durability. The throughout knowledge bring from all source of the reliable sources of information.

3. **Evaluation:** Based on all the information gathered by the individual buyer will evaluate and make decision whether it is worthwhile or whether it will make sense and do him good to try out the innovation. In other words from all the collected information related to innovation buyer will mentally try to evaluate the service attributes and work out to what extent the new service will be useful and then decide whether or not to try the new service.

4. **Trial:** After the evaluation stage next stage is Trial stage. Every Individual person after the evaluation wanted to do trial of the product. Trial is process where we do assessment of product or service on trial basis on small scale of value new product. Trial is for the process of understand the product by consumers to buy it. Invention make the product new and trial make to understand the product. After trial consumer decide to whether consumer wanted go for new trial product on large scale or not. To understand the product character and feature of the product the trial is best thing where we understand product and go for the adoption or not. It helps to understand the product or service.

5. **Adoption:** Last stage of adoption is adoption or the rejection of the product or service. We purchase the new product and after it we trial it after trial we go for the adoption. Adoption is stage where we decide to accept product for the daily consumption and use. This the last stage of the adoption. Buyer take the decision of the adoption and further use of the product and service.” Everett M. Rogers has suggested the five stages of adoption process

Another explanation is that the customer moves from a cognitive state (being aware and informed) to the emotional state (liking and preference) and finally to the behavioral or
conative state (deciding and purchasing). Also called adoption process. See also adopter categories.

### 3.7 Consumer Adopter categories

Classification of consumers on the basis of their degree of readiness to try a new product. Market researchers have identified five categories that exist in every market segment. Starting with those with the highest readiness to try, they are

1. **Innovators:** Innovators are consumers who wanted to get new and more information about the products and service these are very few in number. These are the consumers who always wanted to utilise new product and services. These have habit of trying new products and services. These people are habitual new buyer of products and services. These are seeking more information about product and buy new product. These people are discussed to as Inventors, pioneers or innovators of the new product and service. Innovators are enterprising and have easily considered to new ideas.

2. **Early adopters:** These are the early adopters are the other buyer who buy the ideas and services after the Innovators. They immediately make rush and buy the product available at a market place. They buy product as soon as available at market. These early adopters buy or trying new service quite early but after carefully verifying and gathering information about the new idea or new service from reliable sources. Marketers have acknowledged that the early adopters are frequently familiar as judgement leaders in their social circles or community.

3. **Early majority:** These early majority buyers are those buyers who adopts product and services after some time and careful investigation. These buyers curious and buy the product after detailed investigation and enquiry of product and services. These are the buyers who adopt new service after some time and after careful investigation. These people are more cautious as compared to the innovators or early adopters. These people are more sympathetic, perceptive and will not easily get prejudiced by new services or innovation.
4. **Late majority:** These are buyers who adopt the product after some time or little later are stated as late majority. These people have very conservative approach and do not immediately respond in favour of the change. These are more conservative in approaches do not respond in favour of the change. Their acceptance comes after a public opinion is in favour of the new product and service. These people are with the limited education and average social status, drawing limited salary and consequently having limited purchasing power.

5. **Laggards:** Last stage of the adopter category is known as laggards. In this category of buyers to adopt a new service, comprising of rest of the people. These people are lagging behind and here in their acceptance of innovations. These consumers are very traditional, ritual bound. A lot of deliberation, caution and suspicion exhibited in their buying decisions for new services. These consumers socialise with consumers of analogous civilisations.

### 3.8 Reasons for the study of Consumer Adaptability for Non-Conventional Source of Energy:

This study arises from the need of understand the consume adaptability about non-conventional source of energy as compared to conventional regular source of energy. Its energy saving and finding alternative source of energy for Conventional Energy source. As a consumer are always quality, quantity and price conscious they always want product with best possible solutions with best 4 P’s.

This study arises from the need of Energy/Electricity Saving and finding alternative source of energy for Conventional Energy source.

As a problems are increasing in Urban and Rural India. I.e. Load Shading and Light cut off. It is very necessary that to study awareness created by Non-Conventional Energy Source in India. It is alternative source for the Conventional Energy Source.

The rapid growth of Industry, increase in environmental variability and acute shortage of electricity and the corresponding increase in need of electricity and increasing costs of Electricity and increasing environment pollution.

To Study the best possible and suitable alternative as conventional and non-conventional Source of energy.

To understand cost effective, pollution-free and inexhaustible source. How It save time, money and energy.
To understand the various Government subsidy Schemes on Non-Conventional Energy Sources for peoples, for they are unaware and need to focus and create awareness about it. To know how it helps to generate entrepreneurship and employment opportunity in rural and urban India. To study how it will help to solve energy problem and conserve energy for Industry, Society and Nation like in India.

3.9 7 P’s Consumer Adaptability Perspective

Seven P’s of Marketing Mix play very important role in process of consumer adaptability. These Seven P’s are as follows;

3.9.1 Product
3.9.2 Price
3.9.3 Place
3.9.4 Promotion
3.9.5 People
3.9.6 Process
3.9.7 Physical Evidences
3.9.8 After Sales Services

3.9.1 Product:-
Product is anything offered to customer having physical existence. Mobile, Pen, Solar Photovoltaic these are Products. Product has a physical existence. Having shape, size, colour and available in different varieties. Product with excellent quality, Quantity, Price easily accepted on market place by consumers. In case of solar photovoltaic cell same principle applicable.

3.9.2 Price:-
Price is value associated with particular product. It is amount of money charged for the particular product. Competitive price is accepted by consumers and on market place. It is very important factor for determining product purchase and its adaptability.

3.9.3 Place: -
Place where product is manufactured is manufacturing place, Product is stored in between during transportation in storages at godwon, warehouses. Last place where products stored at retailer, wholesaler, racker, stockiest end. It play very important role for consumer adaptability.
3.9.4 Promotion:-
It various activity used for promotion of goods. Short term incentive utilized for selling goods and services for final consumers is a promotion. Promotion create awareness of product on market place. It makes brands on market place, it makes impact of product its awareness, purchasing and after it helps adaptability of the product.

3.9.5 People:-
People are human being used for the process of production and its handling and at final process of production. People play very important role because he is only who play activity linkages transfer of goods, activity monitoring, measuring, and final finished good handling and sailing. It’s very important and considerable point for consumer adaptability.

3.9.6 Process:-
For every manufacturing has a certain process of manufacturing. Blueprint is copy of manufacturing comes under process. Its activity followed for the production. It’s simple process of operation to make finished good from raw material. It’s very important and considerable point for consumer adaptability.

3.9.7 Physical Evidences:-
Every activity and process having physical evidences which shows its existence. Product having a physical existence, Service don’t have. Due to physical existence we need place for storage of raw material, work in progress and finished goods. It’s very important factor for consumer adaptability.

3.9.8 After Sales Services:-
After process of sale of goods need proper handling and care of good is must. After sales service include yearly maintenance, servicing, repairing, replacement, guarantee and warranty. It’s very important and considerable point for consumer adaptability.

3.10 Barriers of Customer Adoption
In this research has prepared questionnaire for the corporate consumer and household consumer only it’s taken in to consideration only in and around Pune city. Only Pune in and around area geography is limitation. Corporate customer number is very less.
As a solar energy source is used by only limited corporate consumer and household consumers so limitation is there. As most of the household consumers are using only Solar Water heater so there is no scope for the other solar products.
The most of corporate consumer are using only primary MSEB energy source they are not using solar energy source. Because for solar energy required cost for Solar Photovoltaic cell
and cost of inverter battery is very high most of the clients are not thinking to install it. In this case cost is very important factor. Most of the consumer having lack of knowledge regarding government subsidy schemes for solar photovoltaic cell, even they are unaware about exemption of VAT and GST. Adoption as most of the consumer is habitual of MSEB they do not want to invest on Solar Energy Source.

3.11 Factors Influence Consumers Buying Behaviours

Introduction

Buying Behaviour is the process in which study behaviour of consumer for sell or buy the product. There are some factors influence consumer behaviour which keep impact on it. It involve decision making and the buying the products. Some factor influences it which are they? What factors influence consumer purchases? The changing factor are person individual, family, class, society, group, members, culture, relation, festival and many more……. Consumer are king in marketing world need and wants are satisfied with marketing process. There are various process of consumer behaviour as below. Profit maximization is main aim of organisation by the process of the increase of the more and more sales. This consumption of goods by the purchase and consumption of the goods and services and meeting the satisfaction of their needs and wants. Satisfaction meeting the requirement of the individual and group of the people. There are various factor affecting consumer behaviour as follows; Buyer behaviour of consumers influenced by four major factors:

1. Social,
2. Cultural,
3. Psychological,
4. Personal.

These factors keeps more impact on the consumers to product and service development and its brand preferences. Many factors can’t controlled by marketers directly to develop product and brand preferences. Need to develop different marketing mix strategies to target market. Whenever the consumer go buy goods or service passes through following process. It contains five phases:

Consumer Decision making Process
1. Problem Recognition
2. Information Search
3. Evaluation of Alternatives
4. Purchase Decision
5. Post Purchase Behaviour

As shown above buyer decision process sometimes it’s vary. Number of involvement in buying decision process increases the complexity in it. This is influenced by the cultural, social, personal and psychological criteria’s. For this need to develop different marketing mix to keep impact on the target market and customers.

**Cultural Factors - Culture and societal environment**

Culture play important role it is part of the every society. Culture where person grow love that culture. From culture person learn behaviour. It play important role and it vary group to group. Different group of different region, place, country having different culture. Culture develops with family, friends, his cultural environment which teach him values, preferences, as well as common behaviour in all. Every individual is brand conscious, his reaction towards brand is different act differently. Brand is important to understand the consumer behaviour. Your value, prepositions, adoption with different marketing strategy. These play important role in perception, behaviour, habits and consumers expectations. Ex. At college party student gives treat its common. In west some other things works means at party drink is served with the food. Macdonald gives cold with mac food free. KFC gives offer with the seasons. Various country serve their food with their tradition. In Kokan people mostly eat non-veg food and rice. Maharashtra people eat vegetarian food.

**Sub-cultures**

A society and people in the society are made of the various subcultures where you can identify peoples. These are the people who share the same value based similar or common experience and with similar lifestyle. Every culture contains different subculture as religion, nationalities, geographic, racial group. Market segregate the market and divide and make attention towards it. Country like Africa and India having various subculture having many caste, festival and events. We have many languages communicate in different languages. Subculture include sub-culture marketer apply different strategy to market the products.
**Social classes**
Social class include group of the similar and ranked against each other according form of the social order. Large group with similar value, interest, behaviour and lifestyle of the Individual belong to same social class. Marketing activity carried out as per the consumers at society with targeted market. In this attraction elements are quality, innovation, features, or even the social benefit that he can obtain from the product.

**Cultural trends**
Cultural trends are trends developed by various cultural factors influencing consumer behaviour. What cultural factors affecting the consumer behaviour which are widely followed by the people in the society. In the daily life in society people follow the trends which are famous in majority cases people follow ideal person’s lifestyle. Example, Social networking become the cultural trends. On the social networking sites Facebook, twitter, LinkedIn, my space, what’s app, page 4, majority young people accepting it as new and current trends. Use of luxury goods mobile phones are also new trends.

**Social Factors**
Social factors are which are available surrounding our society in between family, friends, relatives, groups, members, family role status etc. It influence the decision power of the people their role and status. Social factors also affect the consumers behaviour. They fall into these comes under three group i.e. Reference groups, family and social roles and status.

**Reference groups and membership groups**
Reference group and the membership groups are group of the people who were crated the member of family or people with member of group. These are individual or social group. These group usually related to its social class, origin, age, place of origin, work hobbies, interest, leisure, habits and many more… Reference group having strong attitude. The impact various according to product and brands. Examples are dress, shoes, shirts, ties and majority external appearances. Reference group are with the skill, knowledge attitude, aptitude and talent etc… “Reference groups are defined as those that provide to the individual some points of comparison more or less direct about his behavior, lifestyle, desires or consumer habits. They influence the image that the individual has of himself as well as his behavior”. Aspiration group is the group of the people who always try to be aspire to achieve something better than last. Aspiration for the higher standard of living, aspiration for the high risk for the
earning money, aspiration of becoming the class one officer in Indian administrative service and serving the country as a best officer of the country to achieve the best. Overall growth and development comes under this only.

**The initiator:** He is the consumer who advise to buy the product or service.

**The influencer:** Consumer decision influence the consumers buying decision. He is the consumer outside the group musician, singer, athlete, actor, composer, dancer etc… on which they rely.

**The decision-maker:** He is the consumer who takes decision of buying goods and service. He the only consumer who buy the goods and services. Any sport event whom to support is decided by the team leader or by the captain.

**The buyer:** Ultimate or final buyer of goods and services are known as the buyer. And definitely he is the final consumer.

**Family**

The family is prime and most important influencing factor for an individual. Family consist of group of people staying under one roof for the food, cloth and shelter for basic requirement. Where they meet for their basic desire of love, affection and emotion etc….. Under family member comes father, mother, children, grandmother grandfather, and companion, nice, many more relations come under family. These important factors keeps impact on the human being life for routine purchase of the product and services. These are influencing factors.

**Social roles and status**

It is the status or position of the person within the organisation within his family, his work, his country, his club, or within friend and group of the people. Status comes below the family status financial status of the individual person or group of the people. It comes under his attitude, behaviour etc…It also denotes his status designation at work. If you take example of the CEO of the Mercedes Benz and ford these two peoples status is totally different varies. Luxury goods and simple good its shows the status of the goods at the same time. Role is the act performed by the particular person to complete the certain task. Role as
father, parent, teacher, manager, assistant, Mayor, chief minister, president, Prinminister, 
Captain, these position do obey different role and responsibility at the time to carry their 
responsibilities at a time.

**Personal factors**
Person factors are persons personal habits, age, lifecycle, lifestyle, occupation, economic 
condition, personality, behaviour at a time. As per situation change our interest and 
preference changes. Buying decision influences this factors.

**Age and way of life**
Human having the life span of the 100 years maximum. But there are various phases of the 
every human being these are birth, childhood, younger, youth, old age and last death. During 
this life cycle we decides various ways in the life. As per age group every individual buy the 
goods and services. As per the group everyone have different lifestyle, value, environment, 
habits, hobbies, etc… In society also he stays according to his buying behaviour. His family 
status single, married, unmarried couple. As per age group, Interest Company make product 
and service to meet every individual person need and requirements.

**Lifestyle**
It includes the all the activities, interests, values, and opinion. Lifestyle influence the buying 
behaviour. Example most of the younger or youth buy the fashionable apparels. Lifestyle 
shows your style of living with the dressing style.

**Personality and self-concept**
Personality include the person with the various traits and characteristics which impact on the 
human behaviour. Individual behaviour materializes into some traits such as confidence, 
sociability, autonomy, charisma, ambition, openness to others, shyness, curiosity, 
adaptability, etc. selfness reflects into the behaviour at all level for the person as self- 
concept. It shows your self-interest into the particular product and services.

**Occupation**
Occupation impact on buying behaviour. It is your profession where you behave as per 
professional deference for the every person’s growth and development at the time. Example 
marketing manager of the company use the formal dress with suit and tie.
**Economic Situation**

Consumer economic situation has great influence on his buying behavior. If the income and savings of a customer is high then he will purchase more expensive products. On the other hand, a person with low income and savings will purchase inexpensive products.

**Lifestyle**

Lifestyle of customers is another import factor affecting the consumer buying behavior. Lifestyle refers to the way a person lives in a society and is expressed by the things in his/her surroundings. It is determined by customer interests, opinions, activities etc… and shapes his whole pattern of acting and interacting in the world.

**Personality**

Personality changes from person to person, time to time and place to place. Therefore it can greatly influence the buying behavior of customers. Actually, Personality is not what one wears; rather it is the totality of behavior of a man in different circumstances. It has different characteristics such as: dominance, aggressiveness, self-confidence etc… which can be useful to determine the consumer behavior for particular product or service.

**Psychological factors**

Maslow’s Need Hierarchy explains that, “It affecting our purchase decision includes motivation, perception, learning, beliefs and attitudes. Other people often influence a consumer’s purchase decision. The marketer needs to know which people are involved in the buying decision and what role each person plays, so that marketing strategies can also be aimed at these people. Among the factors influencing consumer behavior, psychological factors can be divided into 4 categories: motivation, perception, learning as well as beliefs and attitudes.

**Motivation**

Motivation is what will drive consumers to develop a purchasing behavior. It is the expression of a need is which became pressing enough to lead the consumer to want to satisfy it. It is usually working at a subconscious level and is often difficult to measure. The level of motivation also affects the buying behavior of customers. Every person has different needs such as physiological needs, biological needs, social needs etc. The nature of the needs is that, some of them are most pressing while others are least pressing. Therefore a need
becomes a motive when it is more pressing to direct the person to seek satisfaction. Motivation is directly related to the need and is expressed in the same type of classification as defined in the stages of the consumer buying decision process. To increase sales and encourage consumers to purchase, brands should try to create, make conscious or reinforce a need in the consumer's mind so that he develops a purchase motivation. He will be much more interested in considering and buy their products. They must also, according to research, the type of product they sell and the consumers they target, pick out the motivation and the need to which their product respond in order to make them appear as the solution to the consumers need.

Perception
Perception is the process through which an individual selects, organizes and interprets the information he receives in order to do something that makes sense. The perception of a situation at a given time may decide if and how the person will act. Selecting, organizing and interpreting information in a way to produce a meaningful experience of the world is called perception. There are three different perceptual processes which are selective attention, selective distortion and selective retention. In case of selective attention, marketers try to attract the customer attention. Whereas, in case of selective distortion, customers try to interpret the information in a way that will support what the customers already believe.

Selective Attention:
The individual focuses only on a few details or stimulus to which he is subjected. The type of information or stimuli to which an individual is more sensitive depends on the person. For brands and advertisers successfully capture and retain the attention of consumers is increasingly difficult. For example, many users no longer pay any attention, unconsciously, to banner ads on the Internet. This kind of process is called Banner Blindness. The attention level also varies depending on the activity of the individual and the number of other stimuli in the environment. For example, an individual who is bored during a subway trip will be much more attentive to a new ad displayed in the tube. It is a new stimuli that breaks the trip routine for him. Consumers will also be much more attentive to stimuli related to a need. For example, a consumer who wishes to buy a new car will pay more attention to car manufacturer’s ads. While neglecting those for computers. Lastly, people are more likely to be attentive to stimuli that are new or out of the ordinary. For example, an innovative
advertising or a marketing message widely different from its competitors is more likely to be remembered by consumers.

**Selective Distortion:**
In many situations, two people are not going to interpret information or a stimulus in the same way. Each individual will have a different perception based on his experience, state of mind, beliefs and attitudes. Selective distortion leads people to interpret situations in order to make them consistent with their beliefs and values. For brands, it means that the message they communicate will never be perceived exactly in the same way by consumers. And that everyone may have a different perception of it. That’s why it’s important to regularly ask consumers in order to know their actual brand perception. Selective distortion often benefits to strong and popular brands. Studies have shown that the perception and brand image plays a key role in the way consumers perceived and judged the product. Several experiments have shown that even if we give them the same product, consumers find that the product is or tastes better when they have been told that it’s from a brand they like than when they have been told it’s a generic brand.

**Selective Retention:**
People do not retain all the information and stimuli they have been exposed to. Selective retention means what the individual will store and retain from a given situation or a particular stimulus. As for selective distortion, individuals tend to memorize information that will fit with their existing beliefs and perceptions. For example, consumers will remember especially the benefits of a brand or product they like and will forget the drawbacks or competing products advantages.

**Learning**
Learning is through action. When we act, we learn. It implies a change in the behavior resulting from the experience. The learning changes the behavior of an individual as he acquires information and experience. For example, if you are sick after drinking milk, you had a negative experience, you associate the milk with this state of discomfort and you learn that you should not drink milk. Therefore, you don’t buy milk anymore. Rather, if you had a good experience with the product, you will have much more desire to buy it again next time. The learning theories can be used in marketing by brands.
Beliefs and attitudes
A belief is a conviction that an individual has on something. Through the experience he
acquires, his learning and his external influences (family, friends, etc…), he will develop
beliefs that will influence his buying behavior. Customer possesses specific belief and
attitude towards various products. Since such beliefs and attitudes make up brand image and
affect consumer buying behavior therefore marketers are interested in them. Marketers can
change the beliefs and attitudes of customers by launching special campaigns in this regard.
To change the brand’s marketing message or adjust its positioning in order to get consumers
to change their brand perception” 15

Stages of the Consumer Buying Process
There are six stages of consumer buying decision process. Actual purchase process is one
stage process. Remaining all are part of it. Only one stage lead buy product or service. All
process are not determined it depends of degree of complexity.
The process is as follows:
1. Problem Recognition
It is process of identifying problem, need for the particular product or service. Human basic
need food, shelter and clothing. Desired state and actual need. Identification of need and
wants.
2. Information search
Information search process of finding information related to needed product. Search internal,
external, memory, friend, relatives, and market. Successful search help to identify the buyer
possible solution for the problem. Hunger person need food to full fill his need. Indian
tradition food, Chinese food, KFC, Macdonald, CCD food etc…..

3. Evaluation of Alternatives
Evaluation of the alternative where every individual person prepare list of the set of the ideas
from that list of ideas finding best idea to find the best one alternative solution for it. There
are various methods like rank order methods to find out best possible alternative. To eat
something finding best food by test.

4. **Purchase decision**
   It is last method we take final decision of the purchase from all possible alternative, find the best solution for purchase decision.

5. **Purchase**
   After purchase decision purchase of the product for the daily need meet. It is the process where actual purchase decision takes place. Where every person meet their need and requirements for daily requirements and need.

6. **Post-Purchase Evaluation-outcome:**
   After purchase decision next stage is post purchase evaluation. It shows satisfaction or dissatisfaction for the purchased goods or services. If product meet your need is known as satisfaction and product not meet requirement is called dissatisfaction.

   **Cognitive Dissonance:** Have you taken right decision, this may reduce the warranty and guarantee after sales communication, etc. After eating the Amul ice-cream thinking for the vanilla ice-cream.

3.12 **Consumer Behaviour Models**

The effects of social science have provoked marketing professionals to promulgate many buying behaviour models for explaining buyer behaviour. These have two classes’ microeconomic and macroeconomic models. Microeconomic model focus on type of purchase and quality of these purchase made by the consumer. Macroeconomic model consider monetary value of goods and resources and how they will change over the period of time. Many models puts to explained consumer behaviour. All social science like Economics, Psychology, Sociology, sociology and anthropology have influenced buyer behaviour study. Below some consumer behaviour models are discussed to nurture the idea of the social sciences.

1. **The Economic Model:**
   “According to economic model buyer is a rational man and his buying decisions are fully governed by the concept of utility. If the buyer has purchasing power of choosing a set of services to meet his need. He will allocate this amount over the set of services in a very rational manner with the intention of maximising the utility or benefits. People are limited by
their skills, habits, reflexes, knowledge etc. Buyers operate in an imperfect world in which they do not maximize their decisions in terms of economic considerations such as price-quantity relationships, marginal utility or indifference curve. The buyer usually unwilling to engage in extensive decision-making activities and satisfied with utility or benefits of a product”.

2. The Learning Model:
This model takes its cue from the Pavlovian stimulus model- response theory buyer behaviour can be influenced by manipulating the derives, “stimuli and response of the buyer. The model rests on man’s ability of learning, forgetting and discriminating. Stimulus response theory on learning model has its beginning with Russian psychologists Ivan Pavlov. It is based on experiments made by Pavlov on feeding of a dog was preceded by the sound of a bell and found that dogs behaviour is conditioned, it is related to behaviour producing stimulus and behaviour response. The process of learning based on four fundamental factors drives, cues, responses and reinforcement. Driving is a strong internal stimuli impelling action. The cue is a weak stimulus in the environment determining when, where and how an individual responds to the drive. The action to cue is a response and reinforcement takes place when the action is rewarding. If the response is rewarding the individual tends to repeat the response, when the drive is aroused again. Repeated reinforcement leads to habit formation and the decision process for individuals become a routine affair. The Pavlovian model relates buyer behaviour to the learning process and states that response of consumer depends on his experience and level of learning. Therefore, model suggests that marketers have to relate the service brand offering to internal drives of the consumers. Learning is not a perfect predictor of behaviour; there are many other determinants of consumer behaviour such as promotional efforts, expert opinions, short of money, emotions and feelings involved etc. Thus a learned response does not necessarily occur every time a stimulus appears”.

3. The Psycho-Analytical model:
The psycho-analytical model drawn mainly from Freudian psychology, “Sigmund Freud added a new dimension to consumer behaviour theories by introducing psychological elements of the consumer into their decision making. This model considers individual buyer as a complex set of deep-seated motives that derive him towards certain buying decisions. The buyer has his hidden fears, suppressed desires and totally subjective longings. His buying actions can be influenced by appealing these desires and longings. The model describes most superior and innovative implications to the marketer for designing a service message that suits the psychological needs of the consumer. The Psycho-Analytical theory helps the
marketers to understand individual’s real motive for purchasing a particular service or brand. It has caused marketers to realize that they must provide consumers socially acceptable rationalization for their purchase.

4. The Sociological/anthropological Model:
According to the sociological model the individual buyer is influenced by society, intimate groups as well as social classes. Buyers buying decisions are not totally governed by utility; consumer has a desire to follow and fit it with his immediate environment”.

5. Socio-Psychological Model:
This theory is proposed by Veblan, “It is in the context of behavioural aspects related to the economic and personality variables. Consumer behaviour of any person can be understood by society and place of living. These social influences exert pressure and mould individual behaviour. Veblan saw man primarily as a social animal confirming to the general forms and norms of the culture surrounding him. The subculture, norms, reference groups, membership, social class, family and surroundings also mould his behaviour. The challenge to marketers is to determine which of these social levels are most important in influencing the demand for his service”.

6. The Nicosia Model:
This model is developed by, “Nicosia model and Howard and Sheth model belong to a category called systems model where human being is analysed as a system with stimuli as the input and behaviour as the output of the system. Francesco Nicosia an expert in the buyer behaviour and motivation proposed his model of buying behaviour in 1966. The model tries to establish a relationship between a firm and its buyers. The message from the firm first influences the predisposition of the buyer towards the product and services. Depending on the situation he develops a certain attitude towards the product and services. It may lead to a search or evaluation of the service. If these steps have a positive impact on a buyer it may result in a decision to buy. This is the sum and substance of the „activity explanations” in the Nicosia model. The Nicosia model is divided into four major fields:

(a) The buyer’s attitude is based on message exposure: There are two subfields in this field. Subfield 1 includes aspects of the firms marketing environment and communication efforts that affect buyer attitudes such as services attributes, competitive environment, characteristics of mass media, choice of copy and characteristic of the target market. Subfield 2 includes buyer’s service search and evaluation, the act of purchase and feedback in the form of buyer experience to both the firm and buyer.
(b) Buyer’s search for and evaluation of the firm’s output and other available alternatives: The second field of the Nicosia Model deals with the search for relevant information and evaluation of firm’s brand in comparison with alternative brands. The output of this stage is motivation to purchase the specific brand.

(c) The buyer’s motivated act of purchase: In the third field the consumer’s motivation toward the firm’s brands results in purchase of the brand from a specific retailer.

(d) The buyer’s storage or use of the service: The final field consists of two important types of feedback from the post purchase experience; one to the firm in the form of sales data and other to the consumer in the form of experience (satisfaction or dissatisfaction). Experience of consumer with the service affects their attitudes and predispositions concerning future message from the firm. The firm produces some type of communication that the consumer is exposed to. Attributes of the messages and the buyer determine the nature of the buyer’s exposure to it and its influence on him. The attitude of buyer is input to the system. The buyer will probably become motivated to gain information at this point and search activity will involve searching internal memory for relevant information about the communication. External search may also occur. If the buyer process relevant information and begins to favour the firm’s brand he will be motivated toward it. If nothing intervene this motivation leads to purchase. At this point a number of outcomes can occur. One outcome is that the firm receives feedback and another is that the buyer’s attitude toward the brand may change because he gains experience. This service experience is feedback to the buyer’s predispositions”.

7. Howard and Sheth Model:
This model is proposed by John Howard and Jagdish Sheth in 1969 in their publication entitled, “The theory of Buyer Behaviour. This model is a major revision of an earlier systematic effort to develop a comprehensive theory of consumer decision making. The model consider human being as a system with stimuli as input and outputs beginning with attention to a given stimuli and ending with purchase. In between the inputs and outputs there are variables affecting perception and learning. These variables are considered “hypothetical” since they cannot be directly measured at the time of occurrence. It distinguishes three level of decision making:

(a) Extensive problem solving: Early stage of decision making in which the buyer has little information about brands and has not yet developed well defined and structured criteria by which to choose among services.
(b) **Limited problem solving**: In this more advanced stage choice criteria are well defined but the buyer is still undecided about which set of brands will best serve him.

(c) **Routinized response behaviour**: Buyers have well defined choice criteria and also have a strong predisposition towards one brand. A little confusion exists in the mind of a buyer and he is ready to purchase a particular brand with little evaluation of alternatives.

A simplified version of the basic Howard-Sheth model consists of four major sets of variables (1) Inputs, (2) Perceptual and learning constructs, (3) Outputs and (4) Exogenous/external variables.

Input variables in this model are stimuli in the environment. Significant stimuli are actual elements of brand that the buyer confronts whereas symbolic stimuli are generated by producers representing their services in symbolic form. Perceptual of learning construct are central component of the Howard and Sheth model consists of psychological variables that are assumed to operate when the consumer is contemplating a decision. Output variables are arranged in an order from attention to actual purchase. Attention- the magnitude of the buyer’s information intake, comprehension- the buyer’s store of information about brands, attitude- the buyer’s evaluation of a particular brand’s potential to satisfy his motives, Intention- the buyer’s forecast of which brand he or she will buy, purchase behaviour- the actual purchase act which reflects the buyer’s predisposition to buy as modified by any inhibitors. Exogenous variables are not directly part of the decision making process relevant exogenous variables include the importance of the purchase, consumer personality traits, time pressure and financial status.

**Hypothetical constructs**: A number of intervening variables are proposed and represented by hypothetical constructs in the “buyer’s black box” are divided in two major groups:

(a) Perceptual constructs dealing with information processing: There are three perceptual constructs sensitivity to information, perceptual bias and search for information.

(b) Learning constructs dealing with buyer’s formation of concept: Six learning constructs are motive, brand potential of the evoked set, decision mediators, predisposition, inhibitors and satisfaction”.

8. **Engle-Blackwell-Miniard Model**:

This model was originally developed in 1968 by Engle, Kollat and Blackwell followed by number of researches on this model. Recently Miniard has contributed this model in conjunction with Engle and Blackwell, “It stands as one of the most popular representation of buyer behaviour. The model is summarized in four sections (1) Decision-process stages, (2)
Information output, (3) Information processing and (4) variables influencing the decision process.

Variables are grouped into four general categories: stimulus input, information processing, decision process and variables influencing the decision process. The model depicts buyer behaviour or decision process as the central focus of this model defined under five basic decision process stages. These stages are motivation and need recognition, search for information, alternative evaluation, purchase and outcomes.

Similar to Howard-Sheth model the authors recognize two significantly different modes of operation by buyers. One is described as extended problem solving behaviour (EPS) which is categorized by high levels of involvement and high level of perceived risk. In limited problem solving behaviour (LPS) the buyer is operating under low level of involvements and low level of perceived risk. The authors argue that the same basic model can be used to characterize both EPS and LPS, depending on the degree of various stages used by the buyer. These models are helpful in gaining new insight into complex and dynamic buyer behavior. These models have their own pros and cons. Several other models were also proposed but the typical, complicated and unpredicted nature of buyer behaviour could not be fully explained by anyone. Neither they establish a straight input-output equation on buyer behaviour nor they provide a precise answer to the why’s or how’s of buyer of buyer behaviour. It is essential to understand various dimensions of buyer behaviour for developing a sound marketing strategy for a product or a service. The working on buyer mind is still a mystery for marketers”.

9. Sheth Family Decision Making Model:
This Model is developed by Sheth Family Decision making Models, “It consists of three comprehensive models presented were far all focusing on individual decision making model. An alternative perspective considered the family as an appropriate decision making unit. This model shows separate psychological systems representing the distinct predispositions of the father, mother and other family members. The separate predispositions leads into family buying decisions which may be either individually or jointly determined. The model lists seven factors that influences purchase decision are autonomous or joint: social class, lifestyle, role orientation, family life cycle stage, perceived risk, service importance and time pressure. The model suggests that joint decision making tends to prevail in middle class families, newly married and close relation. It is suggested that joint decision making is more prevalent in situations of high perceived risk and uncertainty. The joint purchase decision is also considered important when there is ample time to make a decision”.

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10. Bettman’s Model:
This Model is developed by Bettman’s, “buyer choice portrays that buyer has limited capacity for processing information. When the product of choice is available the consumer rarely analyse other alternatives available in the market. The Bettman’s model suggest that the buyer employs simple decision making. Bettman model consists of a series of interrelated flowcharts that depict various dimensions of the buyer choice process. The Bettman model illustrates its seven basic components: 1. Processing capacity, 2. Motivation, 3. Attention and perceptual encoding, 4. Information acquisition and evaluation, 5. Memory, 6. Decision process and 7. Consumption and learning process.
Processing capacity component influences the other major components of the model. Motivation is another central component of the Bettman Model. It influences both direction, intensity of consumer choice and stimulates the consumer to seek information necessary to evaluate alternatives and make a choice. Motivation provides momentum to consumer by a hierarchy of goals mechanism in a dynamic force that takes the form of a series of intermediate sub goals and lead to a desired end state by selecting a product or service.
The attention and perceptual encoding components are closely related and influenced by the consumer goal hierarchy. There are two types of attention voluntary and involuntary. The perceptual coding element is an extension of the attention component. The consumer organises and interprets perceived stimuli and provides insights into the need for additional information. The consumer undertakes external search to the extent that information now available in memory is inadequate. New information is evaluated on the basis of its suitability or usefulness. The consumer continues to acquire additional information until all relevant information has been secured. Memory is the component through which all information flows. Consumer begins the internal search for information through his memory to reach on a conclusion to select product or service. If the internal information is inadequate the consumer undertake external search.
According to this model different types of choices are normally made in conjunction with the fulfilment of specific components of the model. Thus the choices made during the decision process component are a particular form of choice. The consumption and learning component of this model is concerned with future utilization of experience acquired after the purchasing a product”.

11. Sheth Newman Gross Model of Consumption Values:
This model Developed by Sheth Newman Gross od Consumption Values, “It explain the reasons of selecting a product by the consumer. The model concentrates on assessing
consumption-relevant values that explain why consumers buy a product or not. This model describes three central propositions: (1) Consumer choices is a function of small number of consumption values, (2) Specific consumption value make differential contribution in any given choice situation and (3) Different consumption values are independent. The model describes five consumption values that are core of this model. Functional value of a consumer choice is the perceived functional utilitarian or physical performance utility received from the choice’s attributes. This is associated with economic utility theory. Social value of a choice is the perceived utility acquired because of the association between one or more specific social groups and a consumer’s choice. A consumer choice gains social value by being linked with positively or negatively stereotyped demographic, socioeconomic and cultural ethnic groups. Emotional value of a choice is perceived utility acquired from its capacity to stimulate the consumer’s emotions or feelings. A choice acquires emotional value when associated with specific feelings or when it triggers or sustain those. Products and services are frequently associated with emotional responses.

Epistemic value of a choice is the perceived utility that comes from the choice’s ability to foster curiously, provide novelty and satisfy a desire for knowledge. New purchase and consumption experiences, especially offer epistemic value.

Conditional value of a choice is the perceived utility acquired by a choice as an outcome of some particular situation or circumstance facing the consumer.

The model proposes that consumer choice behaviour may be influenced by any or all of these five consumption values. The model is based on conceptual composition and measurement of five component values in different consumer choice situations. The model has already been tested in more than 200 consumer-choice situations”.

12. Andreasan Model:
This model is developed by Andreasan, “A general model of buyer’s choice behaviour based on several conceptions about attitude formation and change drawn from social psychology. According to Alan R. Andreasan the attitude changes are exposure of various kinds of information. These exposures may be voluntary or involuntary. The entire process comprises of four stages namely input stimuli, perception and filtration, disposition changes and various feasible outcomes. There are two principle strategies adopted by marketers to attract favourable purchase decisions. Market segmentation strategy attempts to fit in existing attitude and behaviour in terms of service design, distribution etc., while service differentiation strategy attempts to change attitude and behaviour to make the consumer accept a particular service. Attitude formation and change are central concept of this model.
There is a difference between what the actual information is and ways people perceive it. Information is not stored objectively but subjectively to perceptual judgment. A marketer should try to build a favourable attitude in consumer. This model is comprehensive, highly complex and based on the concepts of consumer learning along with attitude formation as integral part. Traditional theories concerning consumer behaviour were based on economic theory whereas later researches discovered that consumers purchase impulsively and influenced not only by family, friends, role models and advertisers, but also by mood, situation and emotion. All reflects both the cognitive and emotional aspects of consumer decision making”.

3.13 Research Gap Identified:-

Impressive but not sufficient…

In the Index of the world total energy consumption India stood Sixth.
More than 50,000 villages electrified since Independence.
India has improved its fitted energy capability from 1,362 MW to above 1, 62,366 MW after independence.
India in the term of purchasing power stood Eleventh largest economy in the world.
Power is an essential building block of economic development.
The demand for energy has increased at a normal rate of 3.6% per year in last many years.
It created problem in the demand and supply due to fast growth in use of energy.
More than 80,000 villages are yet to be electrified. Near about 44% of houses don’t have contact to the electricity. India's energy shortage likely to be 5.1%
The Ministry is encouraging the setting up of grid-interactive power projects based on renewable/ Non-conventional energy through private investment route.
Scarcity of electricity will be resolved by non-conventional source of Energy.
Consumer is unaware of state and Central Government Subsidy Schemes of Non-Conventional Energy Sources.

Electricity Status of Maharashtra State Gap between demand and supply of electricity at regular hours in a day.
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<th>Regular Hour Supply MW</th>
<th>Disparity MW</th>
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Table 3.13 Electricity Demand Supply Gap Maharashtra State.

MSEB annual report 2015.