

Chapter - 2

Theory of Demand and Supply

Unit -2 Theory of Consumer Behaviour

■ Meaning of wants :

- All desires, tastes and motives of human beings are called wants in Economics.
- Wants may arise due to elementary and psychological causes.
- Since the resources are limited, we have to choose between the urgent wants and the not so urgent wants.

■ Features of 'Wants':

1. Wants are unlimited in number. They are never completely satisfied.
2. Wants differ in intensity. Some are urgent, others are felt less intensely.
3. Each want is satiable.(Capable of being met/satisfied)
4. Wants are competitive. They compete each other for satisfaction because resources are scarce to satisfy all wants.
5. Wants are complementary. Some wants can be satisfied only by using more than one good or group of goods.
6. A same Want can be satisfied in alternative/many ways.
7. Wants are subjective(Wants vary with time) and relative (wants vary from , place, and person).
8. Wants arise from multiple causes such as natural instincts, social obligation and individual's economic and social status
9. Some wants recur again (wants for non-durable goods like food) whereas others do not occur again and again (wants for durable goods like furniture).
10. Wants may become habits and customs.
11. Wants are affected by income, taste, fashion, advertisements and social customs.

■ Classification of 'Wants':

- In Economics, wants are classified into 3 categories, viz., necessities, comforts and luxuries.
- **Necessaries**
 - Necessaries are those which are essential for living. Necessaries are further sub-divided into:- necessities for life or existence, necessities for efficiency and conventional necessities.
 1. **Necessaries for life** are things necessary to meet the minimum physiological needs for the maintenance of life such as minimum amount of food, clothing and shelter.
 2. **Necessaries for Efficiency:-** Man requires something more than the necessities of life to maintain longevity, energy and efficiency of work, such as nourishing food, adequate clothing, clean water, education, etc. These are necessities for efficiency.

3. **Conventional necessities** arise either due to pressure of habit or due to compelling social customs and conventions. They are not necessary either for existence or for efficiency.

- **Comforts**

- While necessities make life possible comforts make life comfortable and satisfying. Comforts are less urgent than necessities. Tasty and wholesome food, good house, clothes that suit different occasions, audio-visual and labour saving equipments etc. make life more comfortable.

- **Luxuries**

- Luxuries are those wants which are superfluous and expensive. They are not essential for living. Items such as expensive clothing, exclusive motor cars, classy furniture, goods used for vanity etc. fall under this category.

Concept of Utility

- The concept of utility is used in neo classical Economics to explain the operation of the law of demand.

■ Meaning:

- Utility is the want satisfying power of a commodity.

- **Point to be noted:-**

Utility is the anticipated/expected satisfaction by the consumer, and satisfaction is the actual satisfaction derived. A commodity has utility for a consumer even when it is not consumed.

■ Features of Utility

- It is a subjective entity and varies from person to person.
- A commodity has different utility for the same person at different places or at different points of time.
- **Utility v/s Usefulness:-**
It should be noted that utility is not the same thing as usefulness. From the economic standpoint, even harmful things like liquor, may be said to have utility because people want them. Thus, in Economics, the concept of utility is ethically neutral.

■ Two Approaches to utility

- From time to time, different theories have been advanced to explain consumer behaviour and thus to explain his demand for the product. Two important theories are
 1. Marginal Utility Analysis propounded by **Marshall (cardinal utility approach)**, and
 2. Indifference Curve Analysis propounded by **Hicks and Allen (ordinal utility approach)**

Cardinal Approach of Utility Analysis

This theory which is formulated by Alfred Marshall, a British economist, seeks to explain how a consumer spends his income on different goods and services so as to attain maximum satisfaction.

■ Concept of Total Utility and Marginal Utility

- **Total Utility**

- Total utility is the sum of marginal utilities derived from the consumption of different units i.e.
 $TU = MU_1 + MU_2 + \dots + MU_n$

- **Marginal Utility**

- it is the utility derived from the marginal or one additional unit consumed
- Symbolically, $MU_n = TU_n - TU_{n-1}$
- MU can be positive, zero or negative

Law of Diminishing Marginal Utility

- Marshall who was the exponent of the marginal utility analysis, stated the law as follows:
“The additional benefit which a person derives from a given increase in the stock of a thing diminishes with every increase in the stock that he already has.”
 In other words, as a consumer increases the consumption of any one commodity keeping constant the consumption of all other commodities, the marginal utility of the variable commodity must eventually decline.
- **Remember:-** It is the marginal utility and not the total utility which declines with the increase in the consumption of a good.

Relationship b/w MU & TU

1. Total utility rises as long as MU is positive, but at a diminishing rate because MU is diminishing.
2. When marginal utility is zero, total utility is maximum. It is a saturation/satiety point.
3. When marginal utility is negative, total utility is diminishing/falling
4. MU is the rate of change of TU or the slope of TU.

Concept of Consumer Equilibrium

- It is a situation where a consumer maximizes his total utility out of given income and resources.

- The consumer is at equilibrium (one good) where:
 Marginal Utility of the commodity = Price of the commodity

Or

$$\frac{MU_x}{P_x} = MU \text{ money}$$

- The consumer is said to be equilibrium (two goods) when the following condition is met-

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU \text{ money}$$

■ Assumptions/Limitations of this Law of Diminishing Marginal Utility

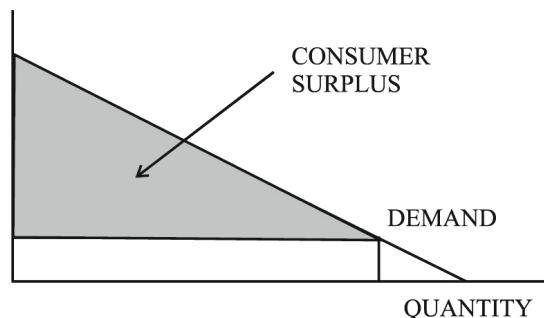
- The law of diminishing marginal utility is applicable only under certain assumptions.
 - (a) **Homogenous units:** The different units consumed should be identical in all respects. The habit, taste, temperament and income of the consumer also should remain unchanged.
 - (b) **Standard units of Consumption:** The different units consumed should consist of standard units. If a thirsty man is given water by successive spoonfuls, the utility of the second spoonful of water may conceivably be greater than the utility of the first.
 - (c) **Continuous Consumption:** There should be no time gap or interval between the consumption of one unit and another unit i.e. there should be continuous consumption.
 - (d) **The Law fails in the case of prestigious goods:** The law may not apply to articles like gold, cash, diamonds etc. where a greater quantity may increase the utility rather than diminish it. It also fails to apply in the case of hobbies, alcohol, cigarettes, rare collections etc.
 - (e) **Case of related goods:** Utility is not in fact independent. The shape of the utility curve may be affected by the presence or absence of articles which are substitutes or complements. The utility obtained from tea may be seriously affected if no sugar is available and the utility of bottled soft drinks will be affected by the availability of fresh juice.
 - (f) **Based on unrealistic assumptions:** The assumptions of cardinal measurability of utility, constancy of marginal utility of money, continuous consumption and consumer rationality are unrealistic

Concept of Consumer Surplus

Marshall defined the concept of consumer's surplus as the “**excess of the price which a consumer would be willing to pay rather than go without a thing over that which he actually does pay**”, is called **consumer's surplus.**”

Thus consumer's surplus = **what a consumer is ready to pay – what he actually pays**
= Marginal Utilities – Price

We can represent consumers surplus with the following diagram.



Consumer surplus is the area below demand curve and above price line.

■ **Uses/Application of the consumer surplus concept are as follows:-**

1. Study of Consumer behaviour to ensure repeated purchases:

Consumer surplus is a measure of the welfare that people gain from consuming goods and services. It is very important to a business firm to reflect on the amount of consumer surplus enjoyed by different segments of their customers because consumers who perceive large surplus are more likely to repeat their purchases.

2. Helpful in Price Discrimination

Understanding the nature and extent of surplus can help business managers make better decisions about setting prices. If a business can identify groups of consumers with different elasticity of demand within their market and the market segments which are willing and able to pay higher prices for the same products, then firms can profitably use price discrimination.

3. Useful in Investment decisions

Large scale investment decisions involve cost benefit analysis which takes into account the extent of consumer surplus which the projects may fetch.

4. Useful in Pricing Decisions

Knowledge of consumer surplus is also important when a firm considers raising its product prices. Customers who enjoyed only a small amount of surplus may no longer be willing to buy products at higher prices. Firms making such decisions should expect to make fewer sales if they increase prices.

5. Useful in deciding Taxation Policy

Consumer surplus usually acts as a guide to finance ministers when they decide on the products on which taxes have to be imposed and the extent to which a commodity tax has to be raised. It is always desirable to impose taxes or increase the rates of taxes on commodities yielding high consumer's surplus because the loss of welfare to citizens will be minimal

■ **CRITICISMS/Limitations of the consumer's surplus concept are as follows:-**

1. Imaginary concept

2. Cardinal measurement is not possible

3. Ignores the interdependence between goods:

The concept of consumer's surplus does not consider the effect of availability and non-availability of substitutes and complementary goods on the consumption of a particular commodity. Actually consumer surplus derived from a commodity is affected by substitutes and complementary goods.

4. Cannot be measured in terms of money:

This is because the marginal utility of money changes as purchases are made and the consumer's stock of money diminishes. But, Marshall assumed that the marginal utility of money to be constant.

5. Not applicable to Necessaries:

It does not apply to the necessities of life. In such cases the surplus is immeasurable e.g. - Food and Water. Consumer surplus is infinite because a consumer will stake whole of his income rather than go without them.

6. **Not applicable to prestige:** e.g. - Diamonds jewellery, etc. fall in their prices lead to a fall in consumer's surplus.

Indifference Curve Analysis – by Hicks and Allen

- This approach to consumer behaviour is based on consumer preferences.

■ **Concept of Indifference Curve**

- An indifference curve is a curve which represents all those combinations of two goods which give same satisfaction to the consumer.
- Since all the combinations on an indifference curve give equal satisfaction to the consumer, the consumer is indifferent among them.
- An Indifference curve is also called iso- utility curve or equal utility curve.

■ **Concept of Marginal Rate of Substitution**

Marginal Rate of Substitution (MRS) is the rate at which a consumer is prepared to exchange goods X and Y.

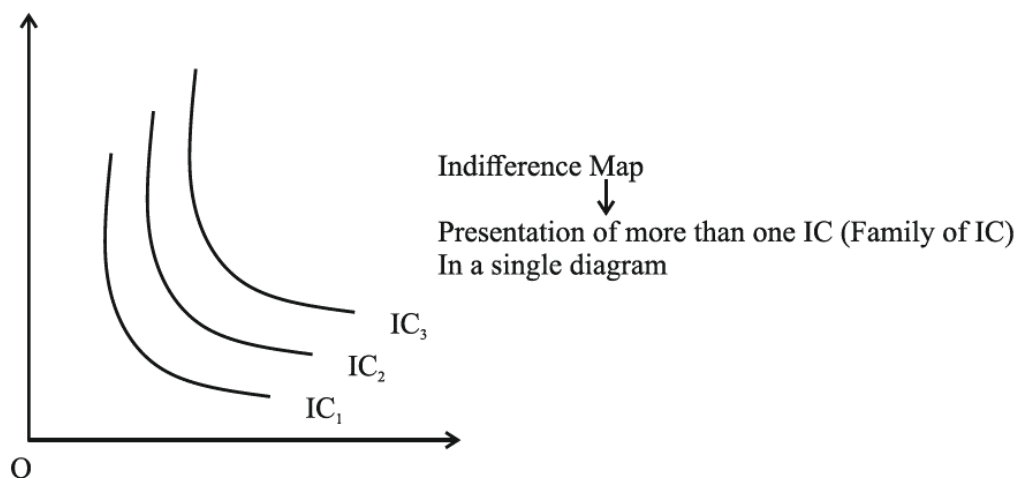
We can define MRS of X for Y as the amount of Y whose loss can just be compensated by a unit gain of X in such a manner that the level of satisfaction remains the same.

The marginal rate of substitution of X for Y (MRS_{XY}) is equal to MUX/MUY

MRS ↓ → Convex to origin

MRS ↑ → Concave to origin

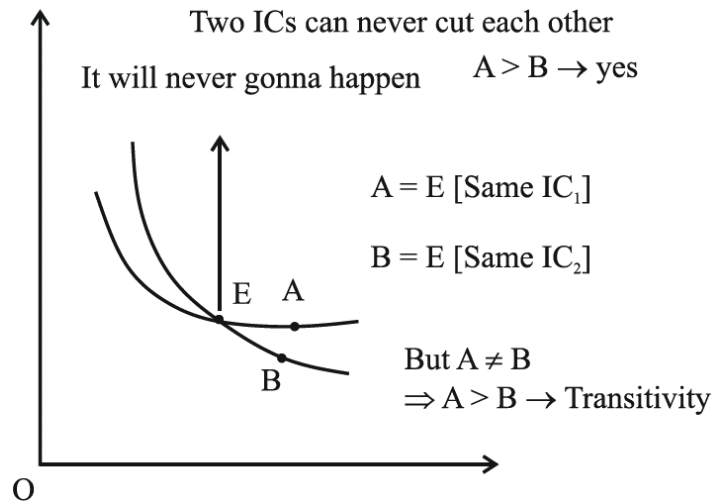
MRS → Constant → Straight line



■ **Properties of Indifference Curve**

- (i) **Indifference curves slope downward to the right** – Reason:
- (ii) **Indifference curves are always convex to the origin:** Reason: **Diminishing MRS**

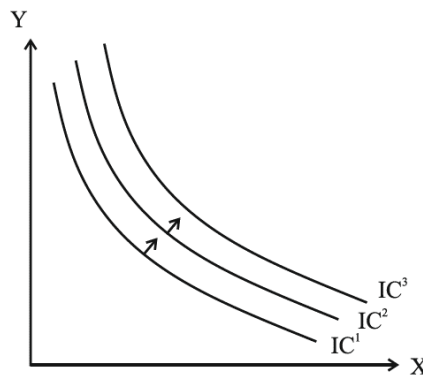
(iii) **Indifference curves can never intersect each other:** Reason: **transitivity**



(iv) **Higher Indifference Curves Represents Higher Level of Satisfaction**

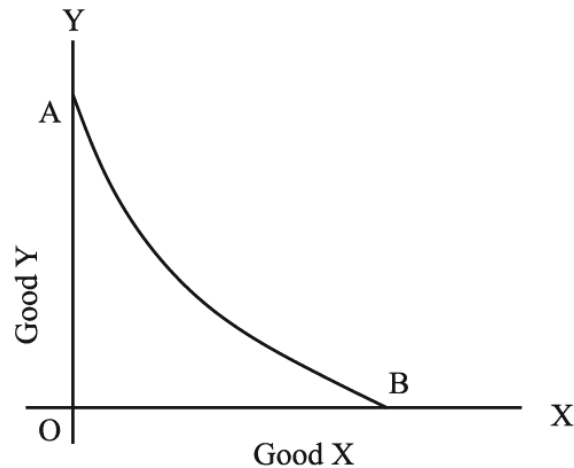
In an indifference map, combinations lying on a higher IC gives higher level of satisfaction than the combinations lying on a lower IC. But how much higher cannot be indicated.

REASON: monotonic preference



(v) **Indifference curve will not touch either X-axis or Y-axis**

This is because we have assumed that consumer is considering the different combinations of TWO commodities.



- If IC touches either of the axis, it would mean that consumer is interested in one commodity only.
- In the diagram IC touches X-axis at point B and Y-axis at point A.
- At point B the consumer is satisfied with OB quantity of X-commodity and zero quantity of A. This is against the definition of IC. Therefore, IC curve will not touch either axis

Two Extreme Situations

A. Shape of IC in case of Perfect Substitutes

When two goods are perfect substitutes of each other, the indifference curve is a straight line on which MRS is constant.

B. Shape of IC in case of Perfect Complementary Goods

When two goods are perfect complementary goods the indifference curve will consist of two straight lines with a right angle bent which is convex to the origin, or in other words, it will be L shaped.

■ Concept of Budget Line or Price Line

- A higher indifference curve shows a higher level of satisfaction than lower one. Therefore, to maximize satisfaction consumer will try to reach the highest possible indifference curve.
- He will try to buy more and more goods to get more and more satisfaction. But, what and how much a consumer can actually buy depends on-
 - a) The money income of consumer, &
 - b) Prices of goods he wants to buy.

They are the two objective factors which form the budgetary constraint of the consumer.

■ What does Budget Line show

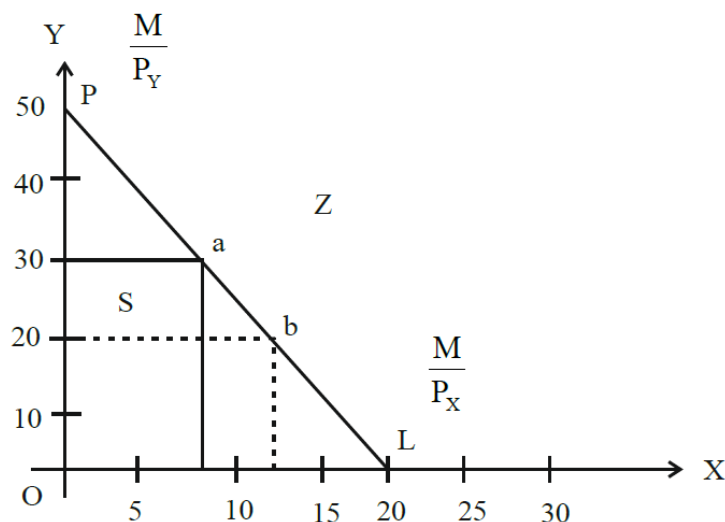
The budgetary position of the consumer can be graphically shown by BUDGET LINE. A budget line or price line shows maximum quantity of the different combinations of TWO GOODS that the consumer can purchase with his given money income and given market prices of goods.

Example:

The consumer's money income is Rs. 100 to spend on X and

Y. Price of X is Rs. 5 per unit Price of Y is Rs. 2 per unit Therefore, the consumer can get either 20 units of X and no Y. OR 50 units of Y and no X. OR Combination of X and Y

Hence, 20 X and 50 Y form the two extreme limits of his expenditure. But the consumer can buy any ONE of the many combinations of X and Y' within these limits. Graphically it can be shown as follows:-



This budget line corresponds to the following equation, called Budget Line Equation

$$P_X \cdot X + P_Y \cdot Y = M$$

Where-

M = Total Money Income

P_X = Price of commodity 'X'

X = Quantity of X commodity

P_Y = Price of commodity

Y = Quantity of 'Y' commodity

■ Observations from Diagrammatic Representation of Budget Line

- **Attainable Combinations:-**

All points on the budget line represent those combinations of goods that can be purchased with the given amount of budget and at which complete budget is spent. On the other hand, points inside budget line represents those combinations at which entire budget is not spent i.e. some part of it remains unspent.

- **Unattainable Combinations:-**

Any point outside Budget line represents unattainable combination i.e. these goods cannot be purchased with the given budget and price levels. These can become attainable only in following scenarios:-

- When prices of goods decrease
- When budget of the customer increases

- **Slope of Budget Line:-**

$$\begin{aligned}\text{Slope of Budget line} &= \text{Market Rate of Exchange (MRE)} \\ &= \text{Price Ratio} \\ &= \frac{P_X}{P_Y}\end{aligned}$$

Q. $M = 100; P_X = 50; P_Y = 10$

$$\Rightarrow \text{Slope} = -\frac{P_X}{P_Y} = -\frac{50}{10} = -5$$

- **Causes of shift in Budget Line:-**

1. Change Price
2. Change in income

- **Consumer Equilibrium under Ordinal Approach**

- **Meaning**

The consumer is said to be in equilibrium when he maximizes his satisfaction (i.e. utility), given the constraint of his limited budget

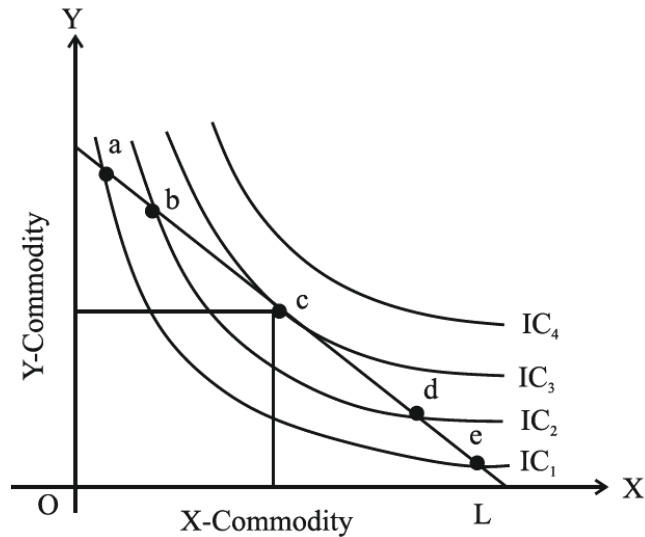
- **How do we achieve Consumer Equilibrium**

To explain the consumer's equilibrium under ordinal approach, we have to make use of TWO TOOLS of indifference curve analysis namely-

1. the consumer's INDIFFERENCE MAP, and
2. his PRICE/BUDGET LINE.
 - The CONSUMER'S INDIFFERENCE MAP shows all indifference curves which rank the consumer's preferences between various possible combinations of TWO commodities.
 - To maximise his satisfaction consumer would like to reach highest possible indifference curve.
 - The slope of IC at any one point shows the MARGINAL RATE OF SUBSTITUTION (which diminishes).

$$\text{Thus, } MRS_{XY} = \frac{MU_X}{MU_Y}$$

- To maximise satisfaction consumer will try to reach the highest possible IC and so will try to buy more and more of the two commodities.



- In order to maximise his satisfaction, the consumer will try to reach highest IC i.e. IC4.
- But the budget constraint forces him to remain ON THE BUDGET LINE.
- In the diagram, budget line PL shows all the combinations of X & Y that the consumer can buy. In diagram, we find combinations a, b, c, d, e lie on budget line PL and hence are affordable.

The indifference curve analysis is superior to utility analysis:

- it dispenses with the assumption of measurability of utility
- it studies more than one commodity at a time
- it does not assume constancy of marginal utility of money
- it segregates income effect from substitution effect.