

# CHAPTER 2

## CONSUMER'S EQUILIBRIUM-UTILITY ANALYSIS

Dear students, before understanding consumer's equilibrium, first understand the meaning of utility

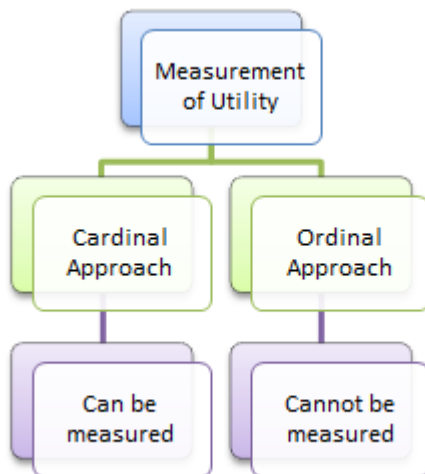
### Meaning and Concept of Utility

Utility Definition – It is a measure of satisfaction an individual gets from the consumption of the commodities. In other words, it is a measurement of usefulness that a consumer obtains from any good. A utility is a measure of how much one enjoys a movie, favourite food, or other goods. It varies with the amount of desire.. One can conclude the following conclusions

1. A Utility of a good differs from one consumer to another.
2. It keeps on changing for the same consumer due to change in the amount of desires.
3. It should not be equated with its usefulness.

### Measurement of Utility

Measurement of a utility helps in analyzing the demand behaviour of a customer. It is measured in two ways



## **Cardinal Approach**

In this approach, one believes that it is measurable. One can express his or her satisfaction in cardinal numbers i.e., the quantitative numbers such as 1, 2, 3, and so on. It tells the preference of a customer in cardinal measurement. It is measured in utils.

## **Ordinal Approach**

In this approach, one believes that it is comparable. One can express his or her satisfaction in ranking. One can compare commodities and give them certain ranks like first, second, tenth, etc. It shows the order of preference. An ordinal approach is a qualitative approach to measuring a utility.

## **Types of Utility**

It is basically of three types

### **Total**

The sum of the total satisfaction from the consumption of specific goods or services. It increases as more goods are consumed.

$$\text{Total Utility (T.U.)} = U_1 + U_2 + \dots + U_n$$

### **Marginal**

It is the additional satisfaction gained from each extra unit of consumption. It decreases with each additional increase in the consumption of a good.

$$\text{Marginal Utility (M.U.)} = \text{Change in T.U.} / \text{Change in Total Quantity} = \Delta \text{TU} / \Delta \text{Q}$$

### **Average**

One can obtain it by dividing the total unit of consumption by the number of total units. Suppose there are total n units, then

$$\text{Average Utility (A.U.)} = \text{T.U.} / \text{Number of units} = \text{T.U.} / n$$

**Law of Diminishing Marginal Utility :** As consumer consumes more and more units of commodity the Marginal utility derived from each successive units go on declining. This is the basis of law of demand

## Meaning of consumer's equilibrium

### Equilibrium means a state of maximum satisfaction.

Consumer's equilibrium is a situation when a consumer spends his given income on the purchase of one or more commodities in such a way that he gets maximum satisfaction and has no urge to change this level of consumption, given the prices of commodities

Conditions of equilibrium (In case of one commodity)

The consumer will be in the state of equilibrium when the following condition is fulfilled:

**The marginal utility of commodity 'X' in terms of rupees is equal to the price of commodity 'X' in rupees. [MU<sub>x</sub> (in Rs.) = P<sub>x</sub> (Rs.)]**

#### i. In case of one community

$$MU_m = \frac{MU_x}{P_x} \text{ [If } MU_m = 1, MU_x = P_x \text{]}$$

(Where, MU<sub>m</sub> = Marginal utility of money, MU<sub>x</sub> = Marginal utility of commodity X and P<sub>x</sub> = Price of commodity X)



Let us take the example of Fruit Ice-cream. Price of an ice-cream Scoop is Rs.30 and MU<sub>m</sub> i.e. MU of money (Re 1) = 1 util.

Units Consumed	MU of Ice-cream Scoop (in utils) {a}	MU of Money (Re 1) (in utils) {b}	MU of Ice-Cream Scoop (in Rs.) = {a}/ {b}		Price of Ice-Cream Scoop (Rs.)
1	50	1	50	>	30
2	40	1	40	>	30
<b>3</b>	30	1	<b>30</b>	=	<b>30</b>
4	20	1	20	<	30
5	10	1	10	<	30

. In the given example, the level of Consumer's Equilibrium is 3 units where,

**MU of Ice Cream in rupees = Price of Ice Cream in rupees** i.e. Rs.30.

- Before this level i.e. at 1<sup>st</sup> and 2<sup>nd</sup> level, MU > Price i.e. benefit is more than cost. So, the consumer will increase consumption to attain equilibrium.
- After this level i.e. at 4<sup>th</sup> and 5<sup>th</sup> level, MU < Price. i.e. benefit is less than cost. So, the consumer will cut or decrease consumption to be in the state of equilibrium. Only at the level of 3 units, the condition of consumer's equilibrium is fulfilled.

A consumer will consume that much quantity at which  $MU_x = P_x$  to be in the state of equilibrium.

Consumer equilibrium ( In case of two commodities)

It is a situation in which a consumer is satisfied and he has no tendency to change his pattern of consumption .In other words A consumer is in equilibrium when he derives maximum satisfaction from the goods and is in no position to rearrange his purchases

Condition:-  $MU_x = MU_y = MUM$

ii. In case of two commodity.

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MUM$$

XY and MU must be decreasing

Thus ,A consumer is said to be in equilibrium when he feels that he “**cannot change his condition either by earning more or by spending more or by changing the quantities of thing he buys**”. A rational consumer will purchase a commodity up to the point where price of the commodity is equal to the marginal utility obtained from the thing.