03. CONSUMPTION - THEORY OF CONSUMER BEHAVIOUR - UTILITY- DEFINITION AND MEASUREMENT – CARDINAL AND ORDINAL APPROACHES – LAW OF DIMINISHING MARGINAL UTILITY – GRAPHICAL DERIVATION OF DEMAND CURVE

A sound understanding on the common terms related to consumption is essential before we get into the detailed study on consumption.

A.DEFINITIONS

i) Goods and Services

Any tangible commodity that satisfies human want is called a good or visible good or material good. These goods can be seen or felt, (E.g.) rice, book, etc. Any intangible thing that satisfies human want is called a service or invisible good or immaterial good. (E.g.) Services of an engineer or a teacher can be sold, but they cannot be seen or felt.

ii) Free Good and Economic Good

A good or service that has no price is called a free good. The air that we breathe satisfies us. But we do not pay any price for such goods. So, these goods are free goods and they are not scarce. Rice is a commodity, which commands a price. Such goods are called economic goods and these goods are scarce.

iii) Consumer Goods and Producer Goods

We use goods like rice, pen etc. to satisfy our wants directly. They are called consumer goods. On the other hand, we use goods like tractor, thrasher, cultivator, etc. to produce various other commodities, i.e., these goods do not satisfy our wants directly. Such goods are called producer goods or capital goods or investment goods.

iv) Perishable Goods and Durable Goods

Goods that decay or perish quickly are known as perishable goods, (E.g.) fruits, vegetables, fishes etc. Durable goods are those goods that last for a long period of time, (E.g.) tractor, thrasher etc.

v) Wealth and Income

In economics, by wealth we mean only economic goods. The production of goods and services creates income and wealth. Wealth is an economic good which is an easily transferable (material) good. Immaterial or non-transferable

(services) goods cannot form wealth. Remuneration paid to the different factors of production is called income. For example, a person leases out his house for rent. Then, the rent is his income. A labourer earns wages for the labour he renders in the production process. Thus, wealth is a fund and income is a flow from the wealth. When we refer to income, we say so much amount for a specific period of time. On the other hand, wealth is termed as the value of all tangible assets (land, building, money etc.) at a particular point of time.

vi) Real Income and Money Income

Income can be expressed in terms of either commodity or money. If income is expressed in terms of commodity, it is known as real income. If the income of an attached labourer or permanent labourer is 10 bags of paddy per year, then it is his real income. The standard of living depends on real income only. When income is expressed in terms of money, then it is called money income. For instance, when we say that the income of a manager is Rs. 2000 per month, then it is his money income.

B. THEORY OF CONSUMER BEHAVIOUR

An important problem to be tackled by the consumer in his daily life is the problem of choice. The choices may be economic as well as non-economic in nature. Economic choices are those which have an economic significance, or which affect the economic life of the community in a direct or in an indirect manner. For instance, if a person grows roses for commercial purpose instead of growing roses as a hobby, it is an economic choice. An economic choice or economic decision involves a choice between alternatives; the basic reason for this being the scarcity of means and multiplicity of ends. Thus, the theories of consumer behaviour relate to the decisions to be taken by the consumer for the purpose of satisfying his wants.

i) Consumption

Consumption, in its broadest sense, means the use of economic goods and personal services for satisfying human wants. It is also defined as the destruction of utilities contained in the goods. The destruction of utilities may be instantaneous as in the case of perishable good or gradual as in the case of durable goods like house, furniture etc.

ii) Wants

Consumption theories deal with the satisfaction of human wants. Any thing that we desire is a want. The process of satisfaction of these wants is called

consumption. The goods and services that satisfy human wants can be broadly divided into three categories, viz., a) necessaries, b) comforts and c) luxuries.

a) Types of Want

i) Necessaries: Necessaries are those goods and services that are essential for our existence and to maintain our efficiency. There are three kinds of necessaries, namely, 1) Necessaries for life, 2) necessaries for efficiency and 3) conventional necessaries.

1) Necessaries for existence or life: These commodities are absolutely essential for the very existence of human beings, (E.g.) food (rice).

2) Necessaries for efficiency: Goods and services which are essential for maintaining the working capacity at a higher level, (E.g.) nutritious food (Horlicks), cycle, etc.

3) Conventional necessaries: Although some goods are not absolutely necessary, many people use them out of habit or long established customs and conventions, (E.g.) coffee or cigarette.

ii) Comforts

Comforts are goods that lead to easy living and make our life pleasant. They also improve our working efficiency. However, there is one important difference between necessaries for efficiency and comforts. In case of necessaries for efficiency, the returns or benefits that we get from them are proportionately higher than the money spent on them. But in case of comforts, the additional benefit or satisfaction is not in proportion to the money spent on them, (E.g.) scooter.

iii) Luxuries

Luxuries are goods and services that are highly expensive and they do not in any way add to the efficiency of people. They are just meant for enhancing the prestige of a person, (E.g.) ornaments, bungalow, car, etc. However, it should be noted that necessaries, comforts and luxuries are all relative terms. They are subjected to vary according to different places, time periods, persons and social setting. For example, scooter is a luxury to a poor man, while it is a comfort to a rich man. Also, what is a comfort today may become a necessity tomorrow.

b) Characteristics of Want: The characteristics of human wants are discussed below:

1) Wants are unlimited in number and variety: As soon as one want is satisfied, another want arises. Thus, there is no end to human desire.

2) Particular want is satiable: The quantity of a commodity that a man can enjoy at a particular time is limited by his physical and mental powers. If a person is hungry, he can satisfy his want fully by consuming sufficient quantity of food at a particular point of time.

3) Wants are recurrent: Wants recur. People want many things again and again, (E.g.) food and clothes. The frequency of consumption of goods and services depends upon the durability and necessity of the commodities.

4) Wants are competitive: Some wants are to be satisfied more urgently than others. A consumer should choose the most urgent want for satisfaction, as the means are always limited. For a hungry man, want for food is more urgent than anything else.

5) Wants are alternative: We have many alternatives to satisfy a particular want. E.g. If tea is not available, a person can drink coffee.

6) Wants are complementary: In order to satisfy a single want, we may require several goods together, (E.g.) betel-leaf and areca nut, pen, ink and paper, etc.

7) Wants tend to become habit: If we satisfy a want in particular way for quite sometime, it becomes a habit. (E.g.) Taking coffee after breakfast.

iii) Standard of Living

The amount of necessaries, comforts and luxuries with which we are generally accustomed is said to constitute our standard of living. Kirkpatrick defined standard of living as "the measure or the evaluated amounts of different kinds and qualities of economic goods involved in meeting the physical and psychic needs and wants of the different individuals composing the family".

a) Determinants of Standard of Living

1. Standard of living depends on real income and not on money income of the family.

2. It depends on number of members in the family and also on their wants.

3. It depends on price variations of commodities. Lower the prices, the higher is the standard of living and vice versa.

iv) Utility

Utility may be defined as the power of a commodity or service to satisfy a human want. The term 'utility' should be differentiated from 'satisfaction'. Utility implies 'expected satisfaction' whereas satisfaction stands for 'realized satisfaction'. A consumer thinks of 'utility' when he is contemplating the purchase of a commodity, but he secures the 'satisfaction' only after having consumed the commodity.

a) Utility and Value: The term 'utility' differs from 'value' of a commodity.

1) Utility is the want-satisfying power of a commodity, while the term 'value' would mean the power of a commodity to exchange for another commodity.

2) Utility is subjective, whereas the value is an objective term.

3) Both economic and free goods have utility. But only economic goods have value.

b) Characteristic Features of Utility

1) Utility is relative: The same commodity may have different degrees or magnitude of utility for different persons.

2) Utility cannot be equated with usefulness: A commodity may not be useful, yet it may have utility for a particular person. For example, liquor is considered to be harmful to health, yet it may have a high degree of utility for an alcoholic. Hence, utility carries no moral or ethical significance.

3) Utilities are independent: Utility of one commodity does not in way affect that of another.

c) Kinds of Utility: Utility of a commodity may increase due to several reasons.

1) Form Utility: If the physical form of a commodity is changed, its utility may increase. For instance, the utility of cotton increases, if it is converted into clothes.

2) Place Utility: If a commodity is transported from one place to another, its utility may increase. For instance, if rice is transported from Tamil Nadu to Kerala, its utility will be more.

3) Time utility: If the commodity is stored up for future usage, its utility may increase. During rainy season, water is stored up in reservoirs and it is used at a later time. This increases the utility of that stored water.

d) Cardinal Utility and Ordinal Utility

According to cardinal utility concept, it is possible to measure and compare the utilities of two commodities. For example, an apple may yield to a consumer a utility of 20 units whereas an orange yields him a utility of 10 units. Therefore, it is clear that the consumer gets twice as much utility from an apple as that from an orange.

On the other hand, according to the concept of ordinal utility, the utility cannot be measured; it can only be compared. A person can only compare the utility he gets from the first unit of orange with the utility he gets from the second unit. Marshall advocated the cardinal approach to measure utility whereas modern economists like Allen and Hicks have supported the ordinary approach and replaced the utility analysis by the indifference curve analysis.

e) Total Utility and Marginal Utility

Total utility is the amount of utility derived from the consumption of all the units of a commodity at the disposal of the consumer. Economists measure utility in imaginary units called **utils. Marginal utility** is the change in the total utility resulting from one unit change in the consumption of a commodity.

$$\text{Marginal Utility} = \frac{\text{Change in Total Utility}}{\text{Change in Quantity Consumed}} = MUx = \frac{\Delta TUx}{\Delta Qx}$$

f) Law of Diminishing Marginal Utility

This law indicates the familiar behaviour of marginal utility, i.e., as a consumer takes more and more units of a good, the additional satisfaction that he derives from an extra unit of the good goes on falling. Marshall stated the law of diminishing marginal utility as follows:
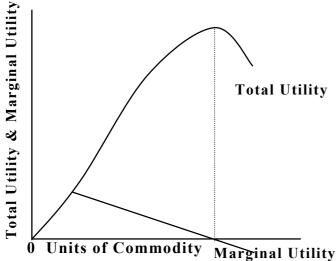
"The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has".
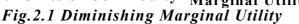
Let us suppose that a consumer takes 9 units of mango one after another. The utility he gets from the second unit of mango will be lesser than the utility he gets from the first unit. Thus, the marginal utility from successive units of mango will tend to decline. It could be observed from Table 2.1 that the total

utility increases at diminishing rate. When the marginal utility becomes negative, the total utility starts decreasing. This is illustrated in Figure 2.1.

Table 2.1 Total and Marginal Utility

Units of Mango	Total Utility (utils)	Marginal Utility (utils)
1	12	12
2	22	10
3	30	8
4	36	6
5	40	4
6	41	1
7	41	0
8	39	-2
9	34	-5

This law is based on two facts. Firstly, while the total number of wants of a man is unlimited, each single want is satiable. Therefore, as an individual consumes more and more units of a good, the intensity of his want for the good goes on falling and a point is reached where the individual no longer wants any more units of the good. Secondly, the different goods are not perfect substitutes for each other. When an individual consumes more and more units of a good, the intensity of his particular want for the good diminishes. But, if the units of that good could be devoted to the satisfaction of other wants and yielded as much satisfaction as they did initially in the satisfaction of the first want, then the marginal utility of the good would not have diminished.

Fig.2.1 Diminishing Marginal Utility

i)Equilibrium Condition

The aim of the consumer is assumed that he should get as much higher satisfaction as possible from his purchases. Thus, the **rational behaviour** of the consumer is to get maximum total utility. If the marginal utility from the commodity is greater than the price he has to pay, he will buy more of the commodity. If the marginal utility of the commodity is equal to the price of the commodity, i.e., MUx = Px, he will stop his purchase of the commodity. Here, the marginal utility

is measured in terms of money. If the price of mango is Re.1 per unit, he will purchase 6 units of mango. At this point, he is said to be in equilibrium i.e., he attains maximum satisfaction.

ii) Assumptions of the Law

1) Utility can be absolutely or cardinally measured.

2) The tastes of the consumers remain unchanged during the process of consumption.

3) Money income of the consumer remains the same. Any rise in the money income of the consumer may influence the taste and preference of the consumer towards the particular commodity.

4) The units of the commodity are homogeneous, i.e., they are alike in size and quality.

5) There is no time gap between consumption of the two units of the commodity. In other words, the process of consumption should be continuous without any time interval.

6) Marginal utility of money remains constant. This assumption becomes necessary, because the marginal utility of a commodity is measured in terms of money and it is desirable that the measure itself should not keep changing. When a person purchases more of a good, the amount of money with him diminishes and therefore, the marginal utility of money increases. But, this variation in marginal utility of money is ignored and it is assumed to remain constant throughout the process of consumption.

7) Price of substitute goods remains constant. For example, apple and orange are substitute goods to each other. When the consumer purchases apple, the price of its substitute, orange, should remain constant. This assumption is necessary because of the fact that the marginal utility of apple decreases, when the quantity of the substitute (orange) to be consumed by the consumer increases. The demand for consumption of orange will rise when its price comes down. Hence, it is assumed that the prices of substitutes remain unchanged throughout the process of consumption.

iii) Limitations

1) There are certain commodities for which the marginal utility does not diminish with every increase in the stock of them, E.g. collection of stamps and

ancient coins, consumption of liquor and so on.

2) The utility of a commodity to a person depends on the quantity of that commodity possessed by others. Suppose in a particular locality, a person has two cars and his rival has only one car. Then the latter's desire for the second car will be higher than that of the first car.

3) The law will not hold good in case of misers. The more money he gets, the greater will be his desire for the additional units of money that he gets.

However, a careful consideration will show that after a certain stage even the marginal utility of liquor, collection of same type of stamps and coins, cars, money, etc will start declining and ultimately become negative. Thus, in reality, there is no exception to this law as it has universal application in all cases of consumption.

iv) Importance of the Law

1) This law enables us to derive the law of demand. The law of demand states that larger quantities of a commodity would be bought at a lower price than at a higher price. The reason is that as more and more units of a commodity is purchased, its marginal utility to the consumer becomes less and less, and he progressively gives lesser importance to additional units of the commodity. He will, therefore, buy additional units of the commodity only at a lower price. The law of demand is, thus, derived from the law of diminishing marginal utility.

2) This law is useful to regulate that consumption expenditure. If the marginal utility of the commodity is equated to its price, then the consumer attains maximum satisfaction.

3) The marginal utility of money to rich people will be smaller than the marginal utility of money to poor people. So, incomes of rich people are taxed at progressive rate for which the law of diminishing marginal utility offers the basis.

4) With the help of marginal utility concept we can explain the difference between value-in-use and value-in-exchange. This can be explained by **diamond - water paradox**. The price of a commodity is governed by its marginal, not total utility. The total utility of water may be infinite on account of its relative abundance, but its marginal utility is zero. Hence, water commands a lower price. On the contrary, the total utility of diamond may be low, but its marginal utility is very high on account of its relative scarcity. Hence, a diamond commands a higher price.

g) Marginal Utilities of Related Goods

Goods may be substitutes or complementary in nature. The substitutes are capable of satisfying the same want, (E.g.) tea and coffee. If they are perfect substitutes, they may be treated as one commodity for all practical purposes. But most goods are imperfect substitutes. In case of such goods, other things being equal, the marginal utility of any such good (mango) decreases, as the quantity of its substitute (orange) with the consumer increases.

Complementary goods are such goods that are wanted together for the satisfaction of a want, (E.g.) bread and butter. In such cases, other things remaining the same, marginal utility of one good increases, as the quantities of its complementary good with the consumer increases. If, for instance, a consumer wants to take more bread, the marginal utility of butter goes up.

h) Law of Equi - Marginal Utility or Law of Substitution or Law of Maximum Satisfaction

If a consumer purchases more than one commodity with a give income level, he applies the law of equi-marginal utility to attain maximum satisfaction. Marshall stated this law as follows:

"If a person has a thing which can be put to several uses, he will distribute it among these uses in such a way that it has the same marginal utility in all".

According to this law, a consumer distributes a given quantity of any commodity among its various uses in such a manner that its marginal utility in all uses is equal. Such a distribution of the commodity will secure the consumer the maximum satisfaction.

Suppose, the consumer is buying only two commodities, orange (X) and mango (Y), by spending a given income. In order to attain equilibrium position, i.e., a position of maximum satisfaction, the consumer has to consider two factors. Firstly, the marginal utilities of the goods and secondly, the prices of such goods. Suppose, the prices of the goods are informed to the consumer. The law states that the consumer will distribute his money income between the goods in such a way that the utility derived from the last rupee on each good is equal. In other words, consumer is in equilibrium position when marginal utility of money expenditure on each good is the same. Now, the marginal utility of money expenditure on a good (MUEx) is equal to the marginal utility of a good (MUx) divided by the price of the good (Px).

In symbols, $MU_E = \dfrac{MUx}{Px}$.

The consumer is in equilibrium, in respect of the two goods, X and Y, when $\dfrac{MUx}{MUy}$ = —————

Now, if $\dfrac{MUx}{Px}$ is greater than $\dfrac{MUy}{Py}$, the consumer will substitute good X for good Y. As a result of substitution, the marginal utility of good X will fall and marginal utility of good Y will rise. The consumer will continue substituting good X for good Y, till $\dfrac{MUx}{Px}$ becomes equal to $\dfrac{MUy}{Py}$. But the equality of $\dfrac{MUx}{Px}$ with $\dfrac{MUy}{Py}$ can be achieved not only at one level but at different levels of expenditure. The question is how far does consumer go on purchasing the goods that he wants. This is determined by the size of his money income. With a given income, a rupee has a certain utility for him; this utility is the marginal utility of money (MUm) to him. Since the law of diminishing marginal utility applies to money income also, the greater the size of his money income, the lesser the marginal utility of money to him and vice versa. Now, the consumer will go on purchasing goods till the marginal utility of money expenditure on each good becomes equal to the marginal utility of money to him. Thus, the consumer will be in equilibrium when the following equation holds good: $\dfrac{MUx}{Px} = \dfrac{MUy}{Py} = MUm$

Let us illustrate the law of equi-marginal utility with the help of a table given below: With a given income (Rs.19) of the consumer, suppose, his marginal utility of money is constant at Re.1 = 6 utils. By looking at Table 2.3, it is clear that, $\dfrac{MUx}{Px}$ is equal to 6 utils when the con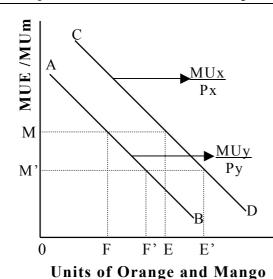sumer buys 5 units of orange (X) ; and $\dfrac{MUy}{Py}$ is equal to6 utils when he purchases 3 units of mango (Y). Thus, the

Table 2.2 Marginal Utilities of Goods X and Y

Units	Orange (X)		Mango (Y)	
	Total Utility (TUx)	Marginal Utility	Total Utility (TUx)	Marginal Utility (MUx)
1	20	20	24	24
2	38	18	45	21
3	54	16	63	18
4	68	14	78	15
5	80	12	87	9
6	90	10	93	6

consumer will be in equilibrium when he is buying 5 units of orange and 3 units

of mango and will be spending (Rs.2 x 5) + (Rs.3 x 3) = Rs.19 on them.

Table 2.3 Marginal Utilities of Money Expenditure of Goods X and Y

Units	$\dfrac{MUx}{Px}$	$\dfrac{MUy}{Py}$
1	10	8
2	9	7
3	8	6
4	7	5
5	6	3
6	5	2

Consumer's equilibrium is graphically given in Fig 2.2. Since marginal utility curves of goods slope downward, curves depicting $\dfrac{MUx}{Px}$ and $\dfrac{MUy}{Py}$ will also slope downward. Taking the income of the consumer as given, let his marginal utility of money be constant at OM units $\dfrac{MUx}{Px}$ is equal to OM (the marginal utility of money) when OE (5) units of orange (X) are purchased. $\dfrac{MUy}{Py}$

is equal to OM, when OF (3) units of mango (Y) are purchased. Thus, when the consumer is buying OE of X and OF of Y, $\dfrac{MUx}{Px} = \dfrac{MUy}{Py}$ No other allocation of money expenditure will yield greater utility than what he is buying, i.e., OE of X and OF of Y. If, now, the money income of the consumer increases, his marginal utility of money is equal to OM', then the consumer will increase the purchase of good X and Y to OE' and OF' respectively.

Fig 2.2 Equilibrium under Law of Equi-Marginal Utility

i) Limitations of Law of Equi-Marginal Utility

1) For applying this law, a consumer has to calculate and compare the marginal utilities obtained from different commodities. But, consumers are generally governed by their habits and customs and they spend on different commodities regardless of whether the particular allocation maximizes their satisfaction or not.

2) The law assumes that all commodities are divisible into very small parts. But, there are goods like car, dairy animal etc., which are indivisible. In such cases, the law cannot be applied.

3) This law is based on the unrealistic assumptions such as absolute measurement of utility and constant marginal utility of money. Utility is a mental phenomenon and it is not absolutely measurable. Again, with every decrease in the stock of money with consumer, marginal utility of money will not remain constant but it will increase.

ii) Application of the Law of Equi-Marginal Utility

1) Consumption: The consumer gets maximum satisfaction through the substitution of a commodity of greater utility for the one that has lesser utility.

2) Production: This law helps the farmer in optimum allocation of resources. He will produce a commodity most economically by substituting one factor for another till their marginal productivities become equal. For instance, if the marginal productivity of human labour is greater than that of capital, the farmer will substitute the former for the latter.

3) Distribution of commodities: The law of equi-marginal utility helps to bring about the optimum distribution of commodities among the members of the community. When a commodity is so distributed among the members of the community that transfer of any unit of it from one person to another person will reduce the total satisfaction, then the distribution is said to be optimum.

4) Optimum allocation of general resources: The optimum allocation of resources is one in which there is nothing to be gained by shifting marginal units of resources from one use to another. In other words, the ideal distribution of resources is that which the marginal social utility in each use is the same.