Utility Analysis

Meaning of Utility:

Utility is a term in economics that refers to the total satisfaction received from consuming a good or service. Economic theories based on rational choice usually assume that consumers will strive to maximize their utility. The utility definition in economics is derived from the concept of usefulness. An economic good yields utility to the extent to which it's useful for satisfying a consumer's want or need. Various schools of thought differ as to how to model economic utility and measure the usefulness of a good or service. Utility in economics was first coined by the noted 18th-century Swiss mathematician Daniel Bernoulli. Since then, economic theory has progressed, leading to various types of economic utility.

Characteristics of Utility:

1. Utility and Usefulness:

Anything having utility does not mean that it is also useful. If a good possesses want satisfying power, it has utility. But the consumption of that good may be 'useful' or 'harmful'. For example, the consumption of wine possesses utility for a man habitual to drinking because it satisfies his want to drink. But the use of wine is harmful for health, but it has utility. Thus utility is not usefulness.

2. Utility and Satisfaction:

Utility is the quality or power of a commodity to satisfy human wants, whereas satisfaction is the result of utility. Apples lying in the shop of a fruit seller have utility for us, but we get satisfaction only when we purchase and consume them. It means utility is present even before the actual consumption of a commodity and satisfaction is obtained only after its consumption. Utility is the cause and satisfaction is the effect or result.

3. Utility and Pleasure:

It is not necessary that a commodity processing utility also gives pleasure when we consume it. Utility is free from pain or pleasure. An injection possesses utility for a patient, because it can relieve him of his illness. But injection gives him no pleasure; instead it gives him some pain. Quinine is bitter in taste but it has the utility to treat the patient from malaria. So, there is no relationship between utility and pleasure.

4. Utility is Subjective:

Utility is a subjective and psychological concept. It means utility of a commodity differs from person to person. Opium is of great utility for a man accustomed to opium, but it has no utility for a man who is not accustomed to opium. In the same manner, utility of different commodities differs from person to person. Therefore, utility is subjective.

5. Utility is Relative:

Utility is a relative concept. A commodity may possess different utility at different times or at different places or for different persons. In olden days, a Tonga had greater utility. But now with the invention of bus, its utility has become less. A rain coat has greater utility in hilly areas during rainy season than in plain areas. A fan has greater utility in summer than in winter.

Concept of Utility Analysis:

Initial Utility:

The utility derived from the first unit of a commodity calls initial utility. Utility derived from the first piece of bread calls initial utility. Thus, the initial utility is the utility obtained from the consumption of the first unit of a commodity. It is always positive.

Total Utility:

Total utility is the sum of utility derived from different units of a commodity consumed by a household.

According to Leftwitch,

"Total utility refers to the entire amount of satisfaction obtained from consuming various quantities of a commodity."

Supposing a consumer four units of apple. If the consumer gets 10 utils from the consumption of first apple, 8 utils from the second, 6 utils from third, and 4 utils from the fourth apple, then the total utility will be 10+8+6+4 = 28.

Accordingly, the total utility can calculate as:

What does Monopoly mean? Understand Monopoly control Methods.

$TU = MU_1 + MU_2 + MU_3 + \_\_\_\_\_ + MU_n$

or

TU = EMU

Here TU = Total utility and MU_1, MU_2, MU_3, +_____MU_n=

The Marginal Utility derived from the first, second, third…….and nth unit.

Marginal Utility:

The Marginal Utility is the utility derived from the additional unit of a commodity consumed. The change that takes place in the total utility by the consumption of an additional unit of a commodity calls marginal utility.

According to Chapman,

"Marginal utility is the addition made to total utility by consuming one more unit of commodity."

Supposing a consumer gets 10 utils from the consumption of one mango and 18 utils from two mangoes, then. the marginal utility of second .mango will be 18-10=8 utils.

The marginal utility can measure with the help of the following formula $MU_{nth} = TU_n – TU_{n-1}$

Here;

- MU_{nth}= Marginal utility of nth unit.
- TU_n= Total utility of "n" units, and.
- TU_{n-1} = Total utility of n-1 units.

Types of Marginal utility:

The following marginal utility can be; positive marginal utility, zero marginal utility, or negative marginal utility.

1. **Positive:** If by consuming additional units of a commodity, total utility goes on increasing, marginal utility will be positive.
2. **Zero:** If the consumption of an additional unit of a commodity causes no change in total utility, the marginal utility will be zero.
3. **Negative:** If the consumption of an additional unit of a commodity causes falls in total utility, the marginal utility will be negative.

Measures of Utility

Cardinal Measurement

According to classical economists, utility can be measured in the same way as weight or height. It is assumed that utility can be measured in numerical terms. By using the cardinal measurement of utility in economics, it is possible to numerically estimate the value which a person derives from consumption of goods and services. But, there was no standard unit for measuring utility. So, economists derived an imaginary measure called utility. For example, you have just eaten an ice cream and a chocolate. You assign 20 utils as the utility derived

from the ice cream. If you liked the chocolate less than the ice cream, you may assign it lesser number of utils or vice versa.

But, utils cannot be taken as a standard unit for measurement of utility in economics as it can vary from individual to individual. Hence, several economists suggested the measurement of utility in monetary terms. This means that utility can be measured in terms of money or price which the consumer is willing to pay for the goods or services. In the above example, suppose 1 util is assumed to be equal to Rs. 1. An ice cream will yield utility worth Rs 20, while the chocolate may yield utility worth Rs. 1. This is termed as value of utility in terms of money.

Ordinal Measure

Modern economists disregarded the concept of cardinal measurement of utility in economics. They believed that utility is an abstract and philosophical concept and thus cannot be measured in numbers and absolute terms. Therefore, they suggested that a consumer can rank various combinations of goods and services in order of his preferences. For example, if a consumer consumes two goods, apples and bananas, then he can indicate whether he prefers apple over a banana or the other way around, or whether he is indifferent between apples and banana i.e. both are equally satisfying.

Law of Diminishing Marginal Utility

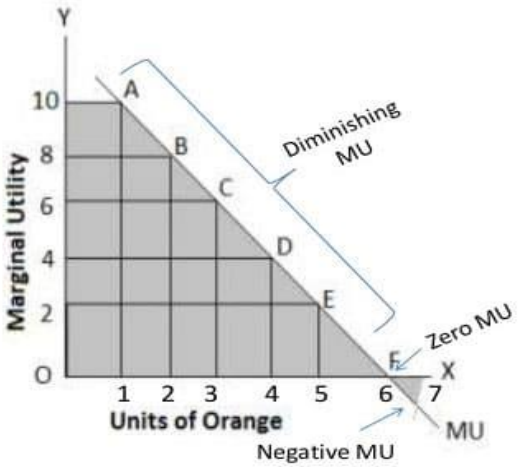
According to the Law of Diminishing Marginal Utility, marginal utility of a good diminishes as an individual consumes more units of a good. In other words, as a consumer takes more units of a good, the extra utility or satisfaction that he derives from an extra unit of the good goes on falling.

It should be carefully noted that is the marginal utility and not the total utility than declines with the increase in the consumption of a good. The law of diminishing marginal utility means that the total utility increases but at a decreasing rate.

Law of Diminishing Marginal Utility

Units	Total Utility	Marginal Utility
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0
7	28	-2

MU curve is downward sloping because of the fact that consumption of successive units gives less satisfaction.



Exceptions to the Law of Diminishing Marginal Utility:

Dissimilar units

This law is applicable for homogenous unit only, i.e. only if all units of a commodity consumed are similar in length, breadth, shape and size. If there is a change in such factors, the utility obtained from it can be increased. For example: If the 2nd orange is much larger than the 1st one, it will yield more satisfaction than the 1st.

Unreasonable quantity

The quantity of the commodity a consumer consumes should be reasonable. If the units of consumption are too small, then every successive unit of consumption may give higher utility to the consumer. For example: If a person is given water by a spoon when he is very thirsty, each additional spoonful will give him more satisfaction.

Not a suitable time period

There should not be very long gap between the consumption of different units of the commodity. If there is time lag between the consumption of different units, then this law may not hold good. For example: If a man has lunch at 10 a.m. and dinner at 8 p.m. and eats nothing in between, the dinner will possibly yield even more satisfaction than the lunch, i.e. his marginal utility will not diminish.

Rare collection

This law does not apply for rare collections such as old coins, stamps and so on because the longer and larger the number he collects, the greater will be the utility.

Change in taste and fashion of the consumer

The law of diminishing marginal utility will be applicable only if the consumer is not supposed to change taste and fashion of the commodity whatever he/she was using previously.

Abnormal person

The law of diminishing marginal utility is applicable for normal person only. Abnormal persons such as drunkards and druggist are not associated with the law.

Change in income of the consumer

To hold the law good, there should not be any change in the income of the consumer. If the income of the consumer increases, he will consume more and more units of a commodity which he prefers. As a result, utility can be increased rather than decreased.

Habitual goods

The law will not be applicable for habitual goods such as consumption of cigarettes, consumption of drugs, alcohol, etc.

Durable and valuable goods

The law is not applicable in case of durable goods as well as valuable goods such as buildings, vehicles, gems, gold, etc.