Index Numbers: Introduction, Objectives and Problems in the Construction of an Index Number

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Introduction

When we attempt to construct an index numbers, for example in selection of items, weights, based period etc. This lesson attempts to explain the nature of these problems in the construction of an index number. It has many uses in the practical life. It is an Extremely useful statistical information for government.
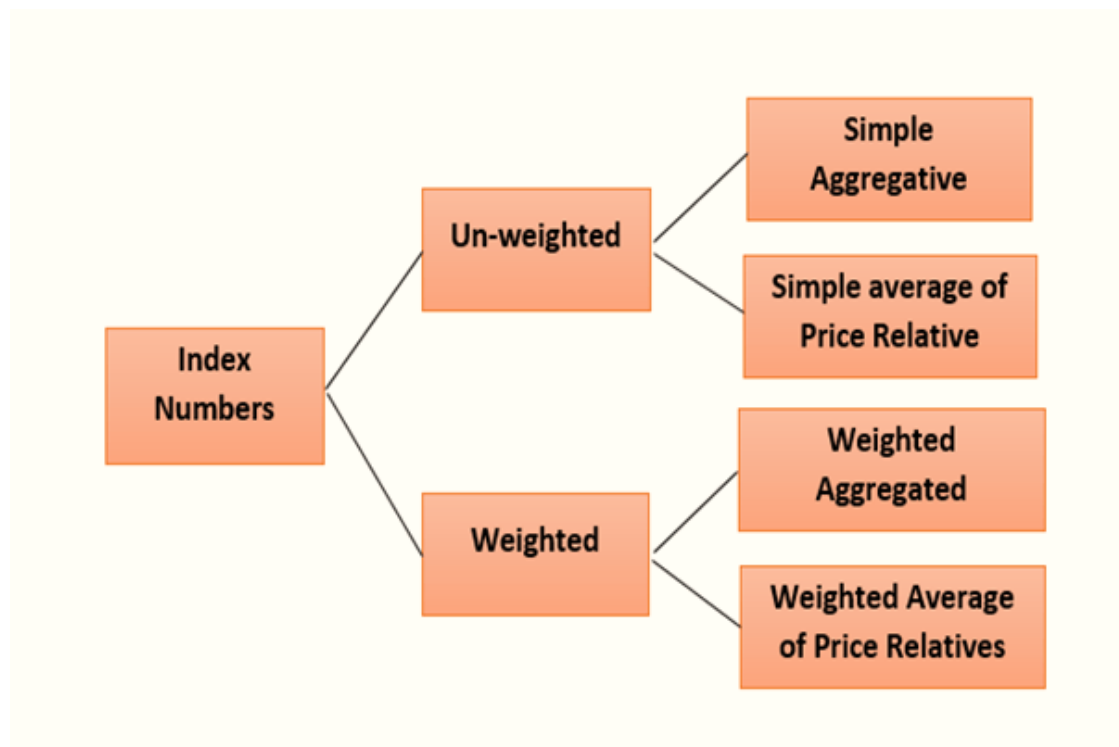
Objectives

- Explain the problems arising in the construction of an index number:

- Explain the important uses of an index number.

- Study an index number in some book or newspaper and make out its meaning.

Problems in the Construction of an Index Number

The Purpose of an Index Number

First of all, we should carefully decide the purpose of constructing an index number, that is what exactly we are going to measure and also how we want to use it. An index number, if properly constructed for the purpose in mind, is the most useful and powerful too. But if it is not properly

constructed, it can be a dangerous one because it is likely to give wrong and misleading result. There is no all-purpose index number. Every index number is of limited and particular use.

Selection of Base Period

Price index number is expressed as a price relative. Therefore, we have to choose a suitable reference or comparison, this is called base or preference Period. This base period is the period with which comparison are made. The choice of base period depends on the objective or Purpose of the index number. It should not be a period too distant in the past because with the passage of time some of the old commodities fade in importance and some new commodities appear to satisfy given wants.

Selection of Goods and Services

This also depends on the purpose of the index number. The commodities and services selected for the purpose should be representative of the group. These should be popular and should represent the tastes, habits, customs and fashions of the people for whom the index number for industrial workers of okhla. We can select some families amongst them and enquire about the goods and services they are generally consuming prices they are paying and places from where they are buying. We can also find the quantities of each good and service used by them.

Selection of Price Quotations

Selection of the prices of goods and services included in index numbers is our next problem. This also can be solved by looking at the results of the family budget enquiries. It would be out of place to take wholesale prices or the prices prevailing in fashionable area. Perhaps the good and services they buy might not available fashionable area. For cost of living index only retail prices are justified.

Choice of Weights

It is an Important Problem in the construction of index numbers. From the family budget enquiries again, it will become clear that all goods and services consumed by our group do not occupy the same place or importance. Some goods and services do not force us to spend a greater portion of income.

Choice of Average

Index number is a statistical device with a purpose of showing average changes in one or more related variables over time and space. It is held that geometric mean is a better method for averaging. But due to difficulties of calculation, it is rarely used. So most commonly arithmetic mean is used. Once this decision has been made.

Choice of Method

This also depends on the purpose of index number.

Importance of Index Number

- Price index is a measure of cost of living. Prices of goods and services we use do change over time. Generally, we observe that prices of goods and services we use at home or in business have a tendency to rise over the period. It leads to rise in the cost of living. The employees in turn demand higher wages etc. is the concern of employers.

- Price index is also a good measure of inflationary and deflationary tendencies in the economy. Governments take suitable policy measures to control these tendencies.

- Production index is a good indicator of the economic progress taking place in the different sectors of the economy. They can also be used to Forecast, future trends in production. As such these indices are extremely useful for planning.

- Other indices relating to national income, exports, imports are also useful. National income index measures the rate of growth.

- Index numbers can also be used to make comparison among different regions of a country and among different countries.

Reading an Index Number

Suppose you come across a certain index number in some newspaper, magazine or a book. Let this be a wholesale price index of country 'X' given below:

Index No. of wholesale Prices (Base 1980 - 81 = 100)

	Primary articles	Manufactured Products	Fuel, Power light and lubricants	All Commodities
Weights	41.67	49.87	8.49	100
1	2	3	4	5
Last week of 1980 - 81	100	100	100	100
Last week of 1985 - 86	149	163	229	162.6
Last week of 1990 - 91	249	267	400	270.7
Last week of 1995 - 96	331	391	609	359.3
Wholesale Prices				

We can drive from the above index about the changes in wholesale prices in the country 'x' . The index classifies all commodities into three groups:

- Primary articles Comprising of food grains, non-food articles and minerals.

- Manufactured Products classified into food products, textile, Chemicals and chemical products, basic metals, alloys and metal product and machinery and transport equipment.

- Fuel, power, light and lubricants.

We can say the following about the above index number:

- The base year is 1980 - 81 which is taken to be 100. Prices of all other year are expressed as percentage of this.

- It is weighted index. Different groups of commodities are assigned different weights. Primary articles, manufactured products, fuel etc. are respectively assigned 41.67% , 49.87% and 8.46% weights out of total of 100.

- Index number is prepared on the basis of prices prevailing in the last week of the year.

- Price index of each year indicates the change in price level in the comparison to the price level of year 1980 - 81 only.

- If we want to compare the index of some particular year with the year different from base year; some more calculations have to be made.

For example, suppose we want to compare price level of primary articles in the year 1995 - 96 with the year 1990 - 91. How much percent is the price level of 1995 - 96 as compared to the price level of 1990 - 91 can be known through calculating a simple percentage in the following manner.

Price level of 1995 - 96 as percent of 1990 - 91

$$= \frac{\text{Price index of} 1995 - 96}{\text{Price index of} 1990 - 91}$$

$$= \frac{331}{249} \times 100 = 133 \text{approx} .$$