

PRODUCTIVITY

Definition. 'Productivity' is nothing but the reduction in wastage of resources. The resources may be men, machines, material, power, space, time and building etc.

It may also be defined as human efforts to produce more and more with less and less inputs of resources as a result of which the benefits of production may be distributed more equally among maximum number of people.

According to V.K.R. Menon, productivity implies development of a n attitude of mind and a constant urge to find better, cheaper,

easier, quicker and safer means of doing a job, manufacturing a product and providing service.

Explanation. Output is obtained by the combined input of a number of factors such as men, material, money, land management and production method etc. The ratio between output and input of one of these factors is known as 'Productivity' of the factor concerned. The most common unit of input is Man-hour of working time and 'productivity' due to this factor is known as 'Labour productivity'.

It can be represented by

$$P = \frac{O}{M}$$

where

P = Labour Productivity

O = Unit of output

M = Man-hour or efforts input

For example, if a manufacturing concern is producing 150 items in 8 hours now compared with 120 items previously. Then its productivity is said to have increased by 25%.

Difference between Production and Productivity. Sometimes, there arises confusion between Production and Productivity. It is therefore, necessary to differentiate them, so that there may not be any confusion.

'Production' of any commodity or service is the volume of output irrespective of the quantity or quality of resources employed to achieve that level of output. Once we put in an element of efficiency with which the resources are employed, we enter the area of productivity.

Importance of Productivity. In India there is an autonomous organisation known as National Productivity Council (N.P.C.). It was established in 1958 and has set 11 regional productivity directorates in the country managed by specialists for organising productivity programmes. It has also established 48 local councils at various industrial centres in the country and they work as the spearhead of the productivity movement.

To increase productivity, this organisation supplies publications, utilises audio-visual media films, and exhibitions. In collaboration with local productivity councils and various institutions and organisations it organises and conducts training programmes for various levels of management and provides assistance in other activities and difficulties.

The main reason of our country's poverty is the low level of productivity in practically every sphere of economy say from management to the workers including Government. The minimum wages in the United States as established by law is more than 3.5 Dollars/hour. This has to be paid to a sweeper, dish washers or any

body else who is asked to work. This works out to about Rs. 350 per day for an 8 hours day. There are a few people in India who by their labour even at very high position get that much per day. Despite very high wages, their unit cost works out to a very low figure and inspite of our low wages our unit costs are high. The main reason is that their productivity is very high and our's very low. In fact, Indian industries are surviving inspite of low productivity behind the rigid protective wall of exchange control. If this is removed our economy may be swamped by foreign goods.

Factors affecting productivity. The most important factors affecting productivity can be classified as :

(a) External Factors.

(b) Internal Factors.

(a) **External Factors.** These may be :

(i) National resources and their mobility.

(ii) Availability of capital.

(iii) Taxation.

(iv) Govt. Laws and restrictions concerning business.

(v) Extent of market competition.

(vi) Technical and other training facilities.

(b) **Internal Factors.** These may be :

(i) Plant layout.

(ii) Material handling.

(iii) Product design.

(iv) Work study.

(v) Method study.

(vi) Quality control.

(vii) Management techniques etc.

How to increase productivity. To increase productivity following major items needs fullest control and should be minimised:

(a) Wastage of materials.

(b) Machine breakdown.

(c) Waiting on the part of men and equipment.

(d) Excessive handling.

(e) Poor management.

(f) Poor working conditions.

(g) Political effects.

Hence, considering the above factors, the wastage at each stage of production can be reduced which ultimately provide consumers cheaper and better quality products.

In increasing productivity, management plays an important role. There can not be high productivity without high quality management.

As, (i) it brings the resources together.

(ii) it directs and controls the workers.

(iii) it brings latest techniques and puts in it heart and soul to see that techniques get into the actual position.

The Supervisors, Foremen and Chargemen etc. are in the front line of management, *i.e.* they constitute the main line of communication between the top management, middle management and the general body of operatives. Hence to have high productivity, it is necessary to see their level of education, attitude and technical ability accordingly. In the same way actual operatives are also responsible in increasing the productivity. They are those who keep the shop running. Therefore, it is important that the management should make an investment in their education, training and human relation etc.

Productivity can also be raised by mechanisation, rationalisation and computerisation.

Advantages of Productivity

- (i) It increases production and hence higher profit can be earned.
- (ii) Product produced will be cheaper.
- (iii) Higher wages and bonus can be allowed to workers because of large profits.
- (iv) It raises living standard of workers.
- (v) It creates better employment opportunities.
- (vi) It allows better working conditions.
- (vii) It brings prosperity in the country.

How to Measure Productivity ?

Productivity must be measured in such a way that it clearly reflects the importance, and there must not be any ambiguities about the measurements of inputs and outputs. As stated earlier

$$\text{Productivity Index} = \frac{\text{Output}}{\text{Input}}$$

Here the output and inputs may be of various kinds *viz.* cost, man-hours etc.

When output and input measured in term of money, then

$$\text{Productivity} = \frac{\text{Output in revenue from production}}{\text{Expenditure on labour, capital on raw material}}$$

It may also be measured as follows :

$$\text{Productivity} = \frac{\text{Profit}}{\text{Investment}}$$

Measurement of Productivity in Various Concerns

1. *In Manufacturing Concerns.* In these concerns, productivity can be measured by any of the above two methods.

2. *In Service Industries.* In these concerns basic difficulty is to measure outputs and to convert various output to one common denominator. One way to measure can be customers attended per

man day or man week. The problem is that different customers require different types of services and the mix of customers changes from day-to-day. Therefore, revenue earned per man-day is more suitable and goal oriented measure.

3. *Office Work.* It is difficult to have any rational basis to measure productivity in the administrative offices. However outputs can be measured in terms of letters replied, pages typed, number of files referred to. Time spent on them can be measured by work sampling techniques. The problem in the management is that letter replied may cover different amount of labour involved in dealing them.

4. *Indirect Labour in Manufacturing.* Productivity of indirect labour may be measured as follows :

$$\text{Productivity} = \frac{\text{No. of indirect labour hours to serve Direct labour}}{\text{Number of direct labour hours}}$$

(i) **General Measure of Productivity :**

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

(ii) **Labour Productivity :**

(a) In terms of Hours :

$$\text{Productivity (i.e. efficiency)} = \frac{\text{Production in Standard hours}}{\text{Actual Man hours}}$$

(b) In terms of Money :

$$\text{Productivity} = \frac{\text{Total cost (or Sales value) of output}}{\text{Number of workers}}$$

The productivity of labour can be increased by increasing efficiency of labour and reducing idle time.

(iii) **Material Productivity :**

$$\text{Productivity} = \frac{\text{Material cost}}{\text{Number of units produced}}$$

Material productivity can be increased by using minimum materials with the help of skilled workers, adequate machine tools, and good design of product.

(iv) **Machine Productivity :**

$$\text{Productivity} = \frac{\text{Output in standard hours}}{\text{Actual machine hours}}$$

(v) **Selling, Distribution or Administrative Productivity :**

$$\text{Productivity} = \frac{\text{Selling, distribution or Administrative cost}}{\text{Total Sales}}$$

(v) **Overall Productivity :**

It is measured by—

$$\text{Return on capital employed} = \frac{\text{Profit}}{\text{Capital employed}}$$