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**PRODUCTIVITY  
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# Productivity and Productivity Improvement

## Concept

Productivity is the ratio between output and input. It is quantitative relationship between what we produce and what we have spent to produce. Productivity is nothing but reduction in wastage of resources like men, material, machine, time, space, capital etc. It can be expressed as human efforts to produce more and more with less and less inputs of resources so that there will be maximum distribution of benefits among maximum number of people. Productivity denotes relationship between output and one or all associated inputs. European Productivity Council states that, Productivity is an attitude of mind. It is a mentality of progress of the constant improvement of that which exists. It is certainty of being able to do better than yesterday and continuously. It is constant adoption of economic and social life to changing conditions. It is continual effort to apply new techniques and methods. It is faith in human progress.

In the words of **Peter Drucker** productivity means a balance between all factors of production that will give the maximum output with the smallest effort.

On the other hand, according to **International Labour Organization** **productivity** is the ratio between the volume of output as measured by production indicates and the corresponding volume of labour input as measured by production indices and the corresponding volume of labour input as measured by employment indices. This definition applies to an enterprise, industry or an economy as a whole.

The productivity of a certain set of resources (input) is therefore the amount of goods or services (output) which is produced by them. Land

and building materials, machines, manpower (labour), technology etc. are the resources at the disposal of a manufacturing company. Therefore higher (improved) productivity means that more is produced with the same expenditure of resource i.e. at the same cost in terms of land, materials, machine, time or labour, alternatively, it means same amount is produced at less cost in terms of land, materials, machine time or labour that is utilized.

In countries where capital and skill are short, while unskilled labour is plentiful and poorly paid, it is especially important that higher productivity (improved) should be looked for by increasing the output per machine or piece of plant or per skilled worker. Improving productivity means increasing or raising productivity with the help of using same amount of materials, machine time, land, labour or technology.

The following examples of each type of productivity may make improved or higher productivity meaning clearer.

### **1. Improved productivity of land:**

If by using better seed, better methods of cultivation and more fertilizer, the yield of corn from a particular hectare of land can be increased from 4 quintals to 6 quintals, the productivity of that land, in the agricultural sense is increased (improved) by 50 percent. The productivity of land used for industrial purposes is said to have been increased if the output of goods or services within that area of land is increased by whatever means.

### **2. Improved productivity of materials:**

A skilled tailor is able to cut 12 suits from a bale of cloth where an unskilled labour is able to cut only 10 suits from a bale of cloth, then the productivity of the bale used by skilled worker is 16.6 percent greater than unskilled labour.

### **3. Improved productivity of machines:**

A machine tool is producing 90 pieces per working day (i.e. 8 hours). Considering that through the use of improved cutting tools, the output is increased to 120 pieces, then the productivity of that machine will be increased by 33.33 percent.

### **4. Improved productivity of Men (Labour):**

The worker is producing 32 plates per hour. Considering that with the improved methods of work, he will be able to produce 42 plates per hour, then productivity of worker will be improved by 31.25 percent. Thus it can be said that more output results into higher productivity or improvement from same amount of resources which means lower money costs and higher net money returns per unit of output.

## **Importance of Higher Productivity**

If the level of output is increased faster than that of input, productivity will increase. Conversely, productivity will be increased if the level of input is decreased faster than that of output. Also, an organization may realize a productivity increase from producing more output with the same level of input. Finally, producing more output with a reduced level of input will result in increased productivity.

Any of these scenarios may be realized through improved methods, investment in machinery and technology, improved quality, and improvement techniques and philosophies such as just-in-time, total quality management, lean production, supply chain management principles, and theory of constraints. A firm or department may undertake a number of key steps toward improving productivity.

William J. Stevenson lists these steps to productivity improvement:

- Develop productivity measures for all operations; measurement is the first step in managing and controlling an organization.
- Look at the system as a whole in deciding which operations are most critical; it is over-all productivity that is important.
- Develop methods for achieving productivity improvement, such as soliciting ideas from workers (perhaps organizing teams of workers, engineers, and managers), studying how other firms have increased productivity, and reexamining the way work is done.
- Establish reasonable goals for improvement.
- Make it clear that management supports and encourages productivity improvement. Consider incentives to reward workers for contributions.
- Measure improvements and publicize them.
- Don't confuse productivity with efficiency. Efficiency is a narrower concept that pertains to getting the most out of a given set of resources; productivity is a broader concept that pertains to use of overall resources. For example, an efficiency perspective on mowing the lawn given a hand mower would focus on the best way to use the hand mower; a productivity perspective would include the possibility of using a power mower. Therefore it is essential to know the importance of higher / improved productivity in manufacturing company/ organization.

Thus importance of productivity can be summarized as follows:

i) **Productivity is a key to prosperity.** Rise in productivity results in higher production which has direct impact on standard of living. It reduces cost per unit and enables reduction in sale price. It increases

wages for workers and increased profit for organization. Higher demand creates more employment opportunities.

**ii) Higher productivity leads to economic growth and social progress.**

Higher productivity helps to reduce cost per piece which make product available at cheaper rate. Thus it is beneficial for consumers. Low price increases demand of the product which in turn increases profit of the organization. Higher profit enables organization to offer higher dividend for shareholders. It increases export and increases foreign exchange reserves of a country.

**iii) Higher productivity requires elimination of waste in all forms.**

It is necessary to eliminate wastage in raw material, wastage of time in case of men and machinery, wastage of space etc. to improve productivity. Several techniques like work study, statistical quality control, inventory control, operation research, value analysis etc. are used to minimize wastage of resources.

**iv) Improvement in productivity is important for country**

Like ours because it can minimize level of poverty and unemployment.

## **Factors of Productivity Improvements**

There are varieties of factors which can affect productivity, both positively and negatively as listed in some factors can be controlled and some cannot be controlled due to natural limitations.

1. Capital investments in production
2. Capital investments in technology
3. Capital investments in equipment

4. Capital investments in facilities
5. Economies of scale
6. Workforce knowledge and skill resulting from training and experience
7. Technological changes
8. Work methods
9. Procedures
10. Systems
11. Quality of products
12. Quality of processes
13. Quality of management
14. Legislative and regulatory environment
15. General levels of education
16. Social environment
17. Geographic factors