UNIT TWO
ELEMENTS OF COST: LABOUR

Objectives

At the end of this chapter, students should be able to understand:

- The meaning of labour cost.
- Understand methods of calculating labour cost.
- Different types of bonus scheme.
- Different methods of calculating labour cost.

Learning Outcome:
At the end of this chapter, students should be able to:

- Explain the meaning of labour cost.
- Identify different methods of labour cost.
- Differentiate between different types of labour cost.
- Calculate the labour cost.

M2.2. Introduction.
This is another important element of cost. It represents the remuneration for employees' effort in the production process. Basically, this element of cost is always complex as human beings are involved. It is prone to constant review from time to time.

Labour Costs
Labour costs can also be classified into:
a. Emoluments: such as basic salaries, overtime pay, acting allowances, bonuses etc.
b. Fringe benefits: To enhance the output and motivate the workers some benefits like rent subsidy, transport allowance, free luncheon etc. are provided

c. Social costs: social / welfare services for the workers like housing, pension schemes, trade union fees, staff canteens etc.
d. Loans and advances: Loans and advances like housing or car loan and salary advance are at times granted to workers to enable them solve particular problems.

Labour turnover: Employee departures are a natural occurrence in any organization, and while some can be avoided by addressing issues such as limited opportunities for advancement, dissatisfaction with compensation and working conditions, and redundancy, others are inevitable due to factors like marriage, pregnancy, retirement, or a spouse's relocation. Thus, labour turnover can be due personal reasons like incapacitation due to old age, permanent disability may due to accidents, old age retirement, marital issues, better working condition or death. It can result from dismissal by the company due to insubordination, inefficiency, criminal prosecution, retrenchment due to work shortage, Others causes of labour turnover are poor condition of service, lack of job security, and poor environmental conditions. The labor turnover rate quantifies the frequency of employee departures, and organizations strive to control and minimize this rate to enhance overall efficiency. Elevated turnover rates lead to increased costs and diminished productivity, impacting the organization negatively. The costs associated with high turnover include various factors, making it imperative for organizations to take measures to reduce and manage turnover effectively.
Consequences of high rate of labour turnover are
(a) It increases cost via:

i. Recruitment costs: costs incurred in" employing new staff e.g. advertising costs, interview costs etc.
ii. Training costs: Costs incurred training new staff both within and outside the organization.
iii. Increased costs of maintaining machinery and equipment due to handling by new, inexperienced operators.
(b) It reduces productivity via the following:
i. Interruption of production.
ii. Slowing down production as a result of the new staff being inexperienced.

Labour Turnover Rate (LTR): is the rate at which employees leave an organization. Mathematically this is represented by the following ratio:

$$LTR = \frac{\text{Average Number of leavers replaced in a period}}{\text{Average Number of employees during that period}} \times \frac{100}{1}$$

Illustration

Chimex Plc has the following as record of labour movement during the first half of the year

No of workers as at beginning of the year = 120

Additional workers employed during the period = 20

Workers that left the firm during the period = 16

Workers as at the end of the period = 124

Required: Calculate the labour turnover rate of Chimex Plc for the first half of the year.

Suggested solution:

$$\text{Formula: } LTR = \frac{\text{Average Number of leavers Replaced in a period}}{\text{Average Number of employees during that period}} \times \frac{100}{1}$$

Number of leavers = 16

Number replaced = 20

Average number of leavers Replaced = 16 + 20/ 2 = 18

Average number of employees during the period= Number at the beginning of the period + number at the end of the period divided by 2

Which is 120 + 124 divide by 2

= 122

By substitution

18/122 x 100 = 14.75%

M2.2.1. Labour Recording

Labour Recording and Costing.

To determine the cost of labour, there should be accurate time keeping of services rendered or accurate record of goods produced depending on whichever remuneration method that is adopted by the company. Accurate record kept forms the basis of wage calculation for such cost accounting data as direct labour cost, overhead build up and labour cost control. Different records are kept for effective labour cost computation.

Attendance Record.

This is a record kept to determine the number of hours that an employee worked within a specified period of time, daily, weekly or monthly. It can be in form of a register kept at the entrance of the office where each employee registers his name and time at the point of entrance.

With the increased use of technology many recording systems are now electronic instead of manual. Such electronic means can be the use of clock cards, plastic card with magnetic strips, thumb printing, picture and voice capturing etc. the primary objective whether manual or electronic is to accurately record the number of hours done by each employee.

Output Records.

This record is adopted when the remuneration of the employee is based on output and not in hours. The objective here no matter the method adopted is to determine the quantity of products produced by each employee within a specified time frame.

Job Cards.

This card is kept to record activities relating to single job or batches. It is likely to contain entering relating to numerous employees. The summary of the job card contains the record of the time and quantities involved in the job or batch.

M2.2.2. Labour Cost Computation

Based on record of hours worked by the employee or record of output the remuneration of the employee is computed. Various aspects of labour costing include

a. Direct wages: This is the portion of wages that is directly attributable to production. Its computation is obtained from the cost cards, excludes overtime and is charged to job or operation engaged and then to the department work in progress control account.
b. Indirect wages: These include the wages not directly attributable to production. The wages of factory supervisors, clerks fall under this. Such forms part of the overheads of the department.

There are two main methods of computing labour remuneration of the employee. The two methods are time based and output-based remuneration methods.

Time Based.

This is a method where the workers are paid based on the number of hours worked at a basic rate per hour. Payment may be on hourly basis, weekly basis or monthly basis. The expected number of hours to be worked in a day is always stated eg 8hours per day or 40hours per week. Additional time worked beyond the stated number of hours would be classified as overtime and would be paid at a higher rate. Mathematically the pay is stated as No of hours worked X Rate per hour.

Conditions Applicable to Time-Based Method of Remuneration.

The time-based payment method is mostly suitable under the following conditions;

i. where quality of work is more important than volume or quantity of work done.

ii. Where it is difficult if not impossible to measure output in quantitative terms eg. Secretaries or office clerks.

iii. Where so many factors beyond the control of the worker influence the output.

iv. Where the worker's learning curve is high.

Advantages:

a. simple in computation of the remuneration.

b. High quality of work produced as the interest is more on time.

c. Combination of expertise. It is easier to combine people of different skills as there is no hard-line distinction between their outputs.

e. A steady income is assured.

Disadvantages:

a. Low production. There is the possibility of having lower production in time-based method as the workers are more interest in time counting than output.

b. Increased cost: This is because more supervision is required at every moment.
c. Laxity among workers. This is obvious as can be seen in civil service situation.
d. De-motivates the workers. Hard working resourceful workers are de-motivated as their earnings is based on time not their output.
e. Encourages inefficiency. Since remuneration is based on time, inefficient workers thrive in the system.

Illustration M2.2.1.

The following data relate to an employee of Tico manufacturing firm for the month January 2020.

No of hours worked by the employee 100hours
Company rate per hour N4,000

The company maintains the time-based method in calculating the gross earnings of the employee.

Solution M2.2.1.

Calculation of the gross earnings for the month

Total hours worked	100
Rate per hour	N4, 000
Gross wage (100X4, 000)	**N400, 000**

Output Based Method.

This is a method whereby a fixed rate is paid per output of production. Also referred to as piece rate method or result method of remuneration. Workers are paid in proportion to the work done by them. It is a performance related system as the remuneration of the employee is dependent on his output. Workers are normally paid a specific rate for number of output produced. In this case the number of units produced is multiplied by the fixed sum already stated. This system is result oriented. Mathematically it is stated thus: No of units produced X Rate per unit. Output based method is subdivided into three:

- Straight piece work system.
- Differential piece work system and

- Piece work system with guaranteed time rate.

Conditions to Apply Output-Based Method.

a. Output can be measured.
b. Standard time to complete a job is measurable.
c. Production is repetitive in nature
d. Workers remain in the same job over a long period of time.
e. Uninterrupted flow of work.

Advantages:

i. Inspires hardworking, efficient workers.
ii. Constant increase in production.
iii. Payment based on effort and output.
iv. Decrease in supervision as more professionals are used.

Disadvantages:

1. Difficulty in fixing wage rate.
2. Lack of guaranteed minimum wage as payment depends on output.
3. Emphasis is more quantity and this may lead to poor quality products.
4. Materials and equipment may be misused.

Straight Piece Work System

This is a method whereby the employees gross wages are calculated by multiplying the number of units produced by the rate per unit. This system is similar to time rate except that the payment is a function of units produced instead of time as in time rate. Time taken or used in production is not considered, rather the units produced is used to compute the earnings.

Illustration M2.2.2.

Tico-Tico Production Company adopted the straight piece work system in calculating the earnings of her employees. In the month of December 2019, the following data relates to the activities of an employee.

Number of units produced	500units
Rate per unit	N8,000

Required: Calculate the gross wage of the employee for the month.

Solution. M2.2.2.

Calculation of Gross Wage

Number of units produced	500
Rate per unit	N8, 000
Gross wage (500 X 8,000)	**N4, 000,000**

Differential Piece Work System

This system is applied where the rate of payment changes at different levels of efficiency or production. It is aimed at providing motivation to enable the company achieve the maximum rate of production. The rate can be graduated as follows:

- ✓ Production below 10units per hour is charged N5,000 per unit
- ✓ Production of 10 to 20 units per hour is charged N8,000 per unit
- ✓ Production of above 20 units per hour is charged N10, 000 per unit.

Piece Work System with Guaranteed Time Rate

This method adopts both methods of remuneration. A certain level of output is determined for workers to be paid based on output. In situations where output is less than the determined quantity, the worker is paid based on time rate. Moreso a specific amount can equally be fixed as a guaranteed payment for a determined output. Whereby the worker exceeds the predetermined output, the difference is paid using the output-based rate.

M.2.3. Labour Incentive Plans

This is a plan created to induce workers to produce more so as to receive a higher rate of remuneration. If the workers are motivated to produce within a specified period, it will save cost as fixed factory cost will be saved. This will then increase the profit of the firm due to the time saved. The workers are then allowed to partake in the profit so generated in a way of incentive. There are various incentive plans which include:

i. Halsey Premium plan
ii. Rowan Premium plan
iii. Taylor's differential plan

iv. Grant task and bonus plan
v. Profit sharing plan
vi. Emerson efficiency plan.

The first two listed above will be discussed at this level.

Halsey Premium Plan

Halsey plan originated from F. A. Halsey an American engineer. This incentive method is a combination of the time and the piece wage in a modified form. Under this plan, a guaranteed wage based on past experience is determined. Halsey premium plan is calculated thus

Bonus = ½ X (Time saved) X Day rate.

Note that time saved = time allowed – time taken.

Objectives:

1. Motivating workers to produce more.
2. To achieve reduction in fixed overhead cost.
3. Provides additional remuneration proportional to additional efforts of the workers
4. To achieve increased production.

Illustration. M2.2.3.

Refer to earlier illustration and calculate Mr X and Mr Y's bonus using Halsey premium plan scheme.

Solution.

Calculation of bonus awarded using Halsey Premium Plan Scheme.

Formula = Bonus = ½ X (Time saved) X Day rate.

	Employee X	Employee Y
Time allowed	24 hours	24hours
Time taken	12 hours	18 hours
Time saved	12 hours	6 hours
Bonus	½ X 12 X 36,000	½ X 6 X 36,000
	= N216, 000	**= N108,000**

Based on the calculations above, it is observed that Rowan bonus scheme yields more income to the employee than the Hasley premium plan scheme.

Rowan Premium Plan

This plan was developed by D. Rowan in 1901. Its main difference with Halsey plan is in the determination of the premium. Unlike fixed percentage in Halsey plan, the Rowan plan considers premium on the basis of the proportion which the time saved bears to the standard time.

$$\text{Bonus awarded to employee} = \frac{\text{Time saved}}{\text{Time allowed}} \times \text{hours worked X Day rate.}$$

The total remuneration of an employee where Rowan bonus is adopted depends on the remuneration plan whether time based or output based. In time based the total remuneration = (Time taken x day rate) + Bonus awarded to employee, while output based = (Qty produced X unit rate) + Bonus awarded to employee.

Illustration M.2.2.4.

The following data applies to the activity of two employees X and Y in a production firm.

Normal time allowed	24 hours
Approved day rate	N36, 000
Time taken by X for production	12 hours
Time taken by Y for production	18 hours.

You are required to calculate the bonus to be awarded to X and Y individually considering the savings in number of hours utilized in the production.

Solution M.2.2.4.

Calculation of bonus awarded using Rowan Bonus Scheme.

Formula = $\frac{\text{Time saved}}{\text{Time allowed}} \times \text{hours worked X Day rate.}$

	Employee X	Employee Y
Time allowed	24 hours	24hours
Time taken	12 hours	18 hours
Time saved	12 hours	6 hours
Bonus	$\frac{12\text{hours}}{24\text{ hours}} \times 12 \times 36{,}000$	$\frac{6\text{ hours}}{24\text{ hours}} \times 18 \times 36{,}000$
	= N216, 000	**= N162, 000**