6 It helps in creating and maintaining cost consciousness among personnel.

7 It helps in developing team spirit among the managerial personnel.

Types or Classes of Variance

Normally, there are two classes of variance-cost variances and sales variances.

Cost Variances

There are three types of cost variances-material variances, labour variances and overhead variances

Material Variances

Material variances are popularly known as material cost variances. Material variances are of three types, namely, material cost variance, material price variance, and material usage variance

Material cost variance: Material cost variance is the difference between standard cost of material specified for the output achieved and the actual cost of material used. The formula for its computation is as follows

Material cost variance = Standard cost of material – Actual cost of material

Standard cost of material = Std. quantity x Std. price per unit

Actual cost of material = Actual quantity x Actual price per unit.

The material cost variance is further analysed into material price variance and material usage variance

Material price variance: It is that part of material cost variance which is due to the difference between standard price and the actual price paid. The following is the formula for its computation:-

Material price variance = Actual qty x (Std. price – Actual price)

Material price variance arises due to the following reasons: (a) Changes in the price of material (b) Uneconomical quantity of material purchased. (c) High transport, storage and handling costs (d) Failure to obtain cash discount. (e) Failure to purchase materials at proper time. (f) Emergency purchase at high price.

Material usage variance: It is that part of material cost variance which is due to the difference between standard quantity and actual quantity used. It is also known as material quantity variance. The following is the formula for its computation:-

Material usage variance = Std. Price x (Std. quantity – Actual quantity)

Thus, material cost variance = Material price variance + Material usage variance

Material usage variance may arise due to: (a) Carelessness in material handling (b) Loss due to pilferage. (c) Faulty workmanship (d) Defect in plant and machinery causing excessive consumption of material. (e) Purchase of inferior quality material (f) Changes in method of production

Example 1

It is estimated that a product requires 50 units of material at the rate of ₹ 3 per unit. The actual consumption of material for manufacturing the same product came to 60 units at the rate of ₹ 2.80 per unit. Calculate: 1. Material cost variance, 2. Material price variance, 3. Material usage variance.

Solution

1 Material cost variance = Std. cost – Actual cost

Std. Cost = Std. quantity x Std. price per unit = 50 x 3 = ₹ 150

Actual cost = Actual qty. x Actual price per unit = 60 x 2.80 = ₹ 168

Material cost variance = ₹ 150 – ₹ 168 = ₹ 18 (unfavourable)

(2) Material price variance = Actual qty x (Std. price – Actual price)

= 60 x (3 – 2.80) = ₹ 12 (favourable)

(3) Material usage variance = Std. price x (Std. qty. – Actual qty.)

= 3 x (50 – 60) = ₹ 30 (unfavourable)

Verification :

MCV = MPV + MUV

₹ 18 (unfavourable) = ₹ 12 (favourable) + ₹ 30 (unfavourable)

Material Mix Variance

Material mix variance arises only when different materials are mixed to manufacture a product, e.g., chemicals, paint etc. It is that part of material usage variance which is due to the difference between standard and actual composition of a mixture

In the case of material mix variance, there can be two situations.

(1) *When the actual weight of mix and standard weight of mix do not differ :* In such a case, material mix variance is calculated by applying the following formula:

Material mix variance = Std. price x (Std. qty – Actual qty.)

In this case, the same formula for calculating usage variance is used. In this situation there is no need to revise standard quantity.

Example 2

From the following information, calculate material mix variance:

	Standard	Actual
Material X:	60 units @ ₹ 10 p.u.	50 units @ ₹ 11 p.u.
Material Y:	40 units @ ₹ 6 p.u.	50 units @ ₹ 5.50 p.u.
	100	100

Solution

Material mix variance = Std. price x (Std. qty – Actual qty.)

X: 10 x (60 – 50) = ₹ 100 (favourable)