Material and Labour Variances: Find the Operational Cause

Controlling & Management Accounting | Intermediate | 60-75 minutes (estimate) | Standard costing basics

Learning outcomes

Reconcile production cost variances and investigate their causes. Calculate the result, reconcile it and communicate its limitations.

Method

With all materials purchased and used in the same period, material price variance is actual quantity × (actual price - standard price); usage variance is (actual quantity - standard quantity allowed) × standard price. Labour rate and efficiency follow the same pattern. Positive amounts here mean unfavorable cost. If purchase and usage volumes differ, price-variance recognition requires a different explicit convention.

Smaller worked example

For 100 units with standard 2 kg at $5/kg, actual use 220 kg at $6/kg costs $1,320. Standard allowed cost is $1,000. Price variance $220 plus usage variance $100 reconciles to $320 adverse.

Business context and rules

Fictional Ridge Manufacturing, September 2026. Output 1,000 finished units. Standard material 2 kg/unit at $5/kg; actual 2,200 kg purchased and fully consumed at $5.50/kg. No opening or ending raw materials, work in progress or scrap recovery. Standard labour 0.5 hours/unit at $20/hour; actual 540 hours at $22/hour. Operations cites overtime and a supplier change, without proof of which effects they caused.

Original synthetic inputs

Input	Value	Unit
Finished output	1000	units
Standard material per unit	2	kg / unit
Standard material price	5	USD / kg
Actual material consumed	2200	kg
Actual material price	5.5	USD / kg
Standard labour per unit	0.5	hours / unit
Standard labour rate	20	USD / hour
Actual labour hours	540	hours
Actual labour rate	22	USD / hour

Required deliverables

Prepare four variance calculations and a total-cost reconciliation. Write three evidence requests to Procurement / Operations / Payroll and distinguish rate, usage and efficiency observations from causal claims.

Use formulas for derived amounts and preserve source data. Put narrative deliverables in the workbook response area; expand it as needed. Compare amounts within 0.01 of the stated unit and percentages within 0.1 percentage point. No unsupported balancing plugs.