

Chapter 02: Section 4

Material Mix and Yield Variance

Practice Question 57:

Palmnest Foods produces a signature tropical fruit juice concentrate. The standard cost card specifies the following for a standard batch of 95 litres of finished concentrate:

- Material A (Mango Pulp): 60 litres at a standard price of Rs. 800 per litre.
- Material B (Passion Fruit Pulp): 40 litres at a standard price of Rs. 1,200 per litre.
- Total standard input: 100 litres.
- Standard yield: 95% (i.e., a 5% process loss is expected).

In the last period, the company produced 1,900 litres of finished concentrate and used the following materials:

- Material A (Mango Pulp): 1,300 litres.
- Material B (Passion Fruit Pulp): 900 litres.

Calculate the material mix and yield variances.

Labour Mix Variance

Practice Question 58:

BlueGem Textiles uses two grades of labour for its stitching department: Skilled and Trainee. The standard labour mix and cost for producing one batch of shirts are:

- Skilled Labour: 20 hours at a standard rate of Rs. 500 per hour.
- Trainee Labour: 30 hours at a standard rate of Rs. 300 per hour.

During a specific week, a total of 550 hours were worked to complete 10 batches. The actual hours were:

- Skilled Labour: 150 hours.
- Trainee Labour: 400 hours.

Calculate the labour mix variance.

Sales Mix Variance

Practice Question 59:

Trident Logic Ltd. sells two software subscription products: CloudSync (a basic cloud storage solution) and DataVault (a premium enterprise data management platform). The budgeted sales and standard contribution margins for the period were:

- CloudSync: Budgeted sales of 6,000 subscriptions. Standard Contribution Margin = Rs. 2,500 per subscription.
- DataVault: Budgeted sales of 4,000 subscriptions. Standard Contribution Margin = Rs. 4,000 per subscription.
- Total Budgeted Sales: 10,000 subscriptions.

The actual sales for the period were:

- CloudSync: 7,500 subscriptions.
- DataVault: 4,500 subscriptions.
- Total Actual Sales: 12,000 subscriptions.

Calculate the sales mix variance based on contribution margin.

Planning and Operating Variances

Practice Question 60:

BlueGem Textiles produces garments. The original standard cost for fabric was Rs. 800 per metre, and the standard quantity was 2.5 metres per garment.

During the period, an unexpected import tariff was imposed. The management accountant determined that a fair revised standard price for fabric was Rs. 850 per metre. Furthermore, due to a design improvement, the revised standard quantity of fabric required was reduced to 2.4 metres per garment.

The company produced 1,000 garments. It purchased 2,600 metres of fabric for Rs. 2,236,000 (an actual price of Rs. 860 per metre) and used 2,450 metres.

Calculate the planning and operational variances for both material price and material usage.

Practice Question 61:

Trident Logic Ltd. launched a new enterprise software deployment service. The original static standard for implementation labour was set at 5 hours per client deployment, at a standard rate of Rs. 1,000 per hour.

The company completed a first batch of 16 client deployments. Based on an 80% learning curve, management determined that the cumulative average time per deployment for 16 deployments should be 2.56 hours. Therefore, the total *learning-adjusted standard hours* for the batch should be $16 \times 2.56 = 40.96$ hours.

The actual hours worked to complete the 16 deployments were 45 hours.

Calculate the labour efficiency planning (learning) variance and the operational efficiency variance.

Power BI for Variance Analysis

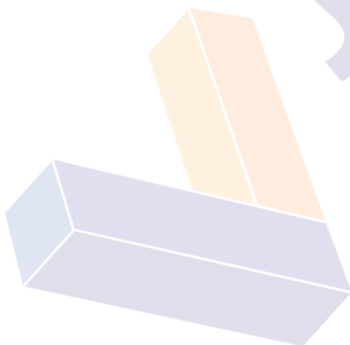
Practice Question 62:

As a BI Developer at Trident Logic Ltd., you face a complex reporting challenge. The company operates as a technology firm with multiple service lines, global delivery centres, and project-based revenue streams. This complexity creates vast amounts of data poorly suited to static Excel reports.

Currently, monthly performance reviews rely on a 50-tab Excel workbook that requires manual compilation. This process introduces errors and delivers reports five days after month-end. Managers cannot analyse performance by different dimensions such as client industry, project manager, or delivery centre without requesting custom reports.

The CFO recognises these limitations and asks: **How should a BI Developer design and build a Power BI dashboard to provide Trident Logic's management with a clear, automated, and insightful view of monthly revenue and cost variances?**

Your task is to create a modern, automated solution that replaces this inefficient process.



Practice Question 63:

A financial analyst at Taprobane Finance wants to measure the volatility of the company's total profit variance over the last six months to understand its predictability. The recorded variances are:

Month	Profit Variance (Rs.)
January	150,000
February	-50,000
March	200,000
April	120,000
May	-100,000
June	80,000

Calculate the standard deviation of the monthly profit variances using the STDEV.P function logic (population standard deviation).

ANSWER

	X	Mean	(X-Mean) ²
Jan	150,000	66,666.67	6,944,444,444.44
Feb	(50,000)	66,666.67	13,611,111,111.11
Mar	200,000	66,666.67	17,777,777,777.78
Apr	120,000	66,666.67	2,844,444,444.44
May	(100,000)	66,666.67	27,777,777,777.78
Jun	80,000	66,666.67	177,777,777.78
	400,000		69,133,333,333.33

$$\text{Mean} = \frac{400,000}{6} = 66,666.67$$

$$\text{Variance} = \frac{69,133,333,333.33}{6} = 11,522,222,222.22$$

$$\text{Std Deviation} = \text{SQ root of variance} = 107,341.61$$

Practice Question 64:

The management team at Oceanleaf Exports is preparing the sales budget for the next quarter. They have used Power BI's time series forecasting feature on the last 24 months of sales data to project the sales for July. The Analytics pane provides the following output:

Forecast Metric	Value (Rs.)
Forecast Value for July	15,500,000
Upper Bound (95% Confidence)	17,200,000
Lower Bound (95% Confidence)	13,800,000

How should management interpret and use this forecast for decision-making?

Behavioural and Ethical Issues in Standardization

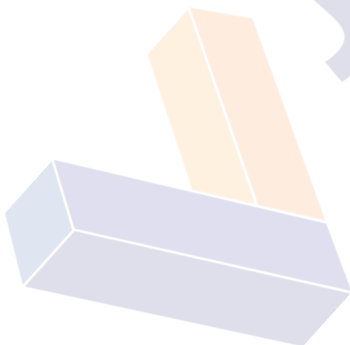
Practice Question 65:

As the Head of Finance at Trident Logic Ltd., you operate within the fast-paced technology industry. Project managers are evaluated based on meeting strict, pre-defined budgets for developer hours (standard costs). This system has produced several negative outcomes. PMs intentionally over-estimate project hours in their initial proposals ('sandbagging') to create a buffer.

They resist adopting new AI-powered coding assistants because, while these tools would improve long-term efficiency, their initial implementation costs would cause an immediate adverse variance. A 'blame culture' has developed where any project that goes over budget is seen as a failure, regardless of the value created or the unexpected complexities encountered.

Why is Trident Logic experiencing dysfunctional behaviours like 'sandbagging' project estimates and a reluctance to adopt new, more efficient development tools, and how can the performance measurement system be adapted?

Your task is to propose specific changes to the performance measurement system to resolve these issues.



Practice Question 66:

As the Chief Operating Officer at Zenith Logistics Lanka Pvt Ltd, you face mounting pressure from conflicting performance indicators. Recently implemented technology-driven control system has delivered impressive results through rigid automation of delivery routes, minute-by-minute driver performance tracking, and scripted customer interactions.

These measures have achieved a 5% improvement in on-time delivery rates within just one quarter. However, your HR department reports a sharp increase in driver resignations, with exit interviews revealing feelings of disempowerment and loss of professional autonomy. Customer service logs show rising complaints about the company's inability to accommodate special requests or deviations from standard processes.

The relentless focus on quantifiable delivery metrics has created a perception of declining service quality despite operational improvements.

How can you diagnose and mitigate the negative consequences of McDonaldization while maintaining operational efficiency?

Your board expects a comprehensive response that addresses both employee retention and customer satisfaction without sacrificing the gains achieved.

Practice Question 67:

As the Chief Risk Officer (CRO) at Taprobane Finance Ltd., you are reviewing a recent internal audit report. The audit reveals that loan officers in a high-performing branch are pressuring unqualified customers into taking on debt to meet aggressive sales targets.

The current performance measurement system is based almost entirely on the volume and value of loans disbursed. This creates intense pressure to meet monthly targets. To avoid adverse variances, some officers are overlooking negative credit indicators and encouraging customers to take on loans they cannot afford.

This practice leads to a future risk of high defaults and causes potential harm to vulnerable customers. The reporting lacks transparency, as it does not highlight the quality of loans being written.

How can the CRO develop a more ethical performance measurement system?

You must redesign the system to align performance metrics with both business sustainability and ethical responsibilities.

