Lecture 2: Exercises

A hotel business has forecasted that the next year (i.e., 2023) it will have 130,000 overnight stays (q). The price per staying is €60. The accounting department has estimated that the operating cost can be calculated as follows.

Payroll	2,000,000+2q
Food & Beverage	12q
General Expenses	80,000+13q

At the end of 2023, the actual results were as follows:

Overnight stays	150,000
Revenues	8,250,000
Costs	
Payroll	2,350,000
Food & Beverage	1,830,000
General Expenses	1,800,000
Total Cost	5,980,000
Operating Income	2,270,000

Required:

1. Prepare a static budget of the operating income.
2. Calculate total variances.
3. Prepare the flexible budget.
4. Calculate the volume variances and the selling price/expenditure variances.

Solution

	(1) Static	(2) Actual	(3) = (2) – (1) Total Var.	(4) Flexible	(5)=(4) - (1) Sales Volume Var.	(6)=(2) – (4) Flexible Budget Var.
Overnight stays (q)	130.000	150.000	20.000 F	150.000	20.000 F	0
Revenues (60q)	7.800.000	8.250.000	450.000 F	9.000.000	1.200.000 F	-750.000 U
Expenses						
Payroll (2.000.000+2q)	2.260.000	2.350.000	90.000 U	2.300.000	40.000 U	50.000 U
F&B (12q)	1.560.000	1.830.000	270.000 U	1.800.000	240.000 U	30.000 U
GE (80.000+13q)	1.770.000	1.800.000	30.000 U	2.030.000	260.000 U	-230.000 F
Total Expenses	5.590.000	5.980.000	390.000 U	6.130.000	540.000 U	-150.000 F
Operating Income	2.210.000	2.270.000	60.000 F	2.870.000	660.000 F	-600.000 U

Exercise 2.2 Price and quantity variances

The manufacturing firm ABC produces the product X. The following budgeted and actual results are available:

Budgeted volume (units)	40,000	Actual Volume (units)	38,000
Budgeted Selling Price	30	Actual Selling Price	30
Budgeted price of Direct Materials per unit of direct material	2	Actual total cost of DM (€)	360,000
Standard quantity of DM per unit	4	Actual quantity of DM	200,000
Standard rate of Direct Labor per hour	18	Actual total cost of DL (€)	436,800
Standard DL hours per unit	0.5	Actual DLH	24,000
Standard Variable OH rate per DLH	6	Actual Variable OH (€)	144,000
Standard Fixed OH	180,000	Actual Fixed OH (€)	200,000
Standard rate of Fixed OH per DLH	9		

Required:

1. Prepare a static budget of operating income, a flexible budget and calculate the total variances, the volume variances and the selling price/expenditure variances.
2. Prepare a variance analysis matrix for DM, DL and Variable OH.
3. How would the DM variance change if the purchase cost was €396,000 for 220,000 DM units.
4. Prepare a Fixed OH variance analysis.

For all the above cases, assume that ABC has zero beginning/ending inventories of raw materials, work-in-progress, and finished products except Q3 that there is an ending inventory of 20,000 raw material units.

1.

	Static	**Flexible**	**Actual**	**Sales Volume Var.**	**Flexible Budget Var.**
Volume	40,000	38,000	38,000	-2,000	0
Revenues	1,200,000	1,140,000	1140000	-60,000	0
DM	320,000	304,000	360,000	-16,000	56,000
DL	360,000	342,000	436,800	-18,000	94,800
Variable OH	120,000	114,000	144,000	-6,000	30,000
Fixed OH	180,000	180,000	200,000	0	20,000
Total Cost	980,000	940,000	1,140,800	-40,000	200,800
Operating Income	220,000	200,000	-800	-20,000	-200,800

2.

Variance analysis matrix													
	SP	SQ per unit	Output	SQ	SC		AP	AQ	AC	Var.	Price/Spending Variance (SP-AP)xAQ	Efficiency Variance (SQ-AQ)xSP	Total
DM	2	4	38,000	152,000	304,000		1,8	200,000	360,000	56,000	(40,000)	96,000	56,000
DL	18	0.5	38,000	19,000	342,000		18,2	24,000	436,800	94,800	4,800	90,000	94,800
Variable OH	6	0.5	38,000	19,000	114,000		6	24,000	144,000	30,000	0	30,000	30,000
DM	2	4	38,000	152,000	304,000		1,8	220,000	396,000	56,000	-44,000		
							1,8	200,000	360,000			96,000	
										Stock	40,000		

3.

Actual FOH	200,000
Standard FOH	180,000
Actually Absorbed FOH (24.000*9)	216,000
FOH that should have been absorbed according to standards (38,000×0,5×9)	171,000

Total variance = 200,000 – 180,000 = 20,000
Production volume variance = 180,000 – 216,000 = -36,000
Spending variance = 216,000 – 200,000 = 16,000