PRACTICE EXERCISE Nº 2. Productivity

Resources:

Exercise nº 1

The director of the 'Hotel Mediterraneo' knows that every day they must prepare and serve 400 breakfasts with 5 workers, from 6.30 until 10.30 am. The cost per worker is € 25/hour and the sales price of each breakfast is €13.

The director of the 'Hotel Wellness' serves every day 420 breakfasts with 8 workers, from 7.00 to 10.00 am. The cost per worker is €20/hour and the sales price of each breakfast is €15.

a) Calculate the productivity of the labour factor, in physical units, per worker-hour, and in monetary units, in both hotels.

b) In which hotel is the productivity of the labour factor (per worker-hour) in physical units greater? In which hotel is the productivity of the labour factor (in euros per worker-hour) greater in monetary units? Explain the results obtained.

c) If the 'Hotel Wellness' reduces the workforce by a worker and renegotiates the cost/hour to €30, calculate the new productivity of the labour factor in physical (per worker-hour) and monetary units. Explain the results obtained: has productivity increased or decreased? Why?

Exercise nº 2:

A manufacturer of sports shoes is worried about the competition and has decided to be more productive. This is why he has decided to introduce new technology, which involves an increase in energy and depreciation costs of €18,000 (an increase of 10% over the previous year figures) and hire a new worker for 360 hours a year with a cost increase of €24,000 euros/year (increasing the labour factor cost by 20%)

Last year productivity had been €3 of sales/euro of cost, and the objective is to increase this by 25%. If the unit price of each pair of shoes is €9, by how much should he increase production?

Exercise nº 3:

A workshop that makes fine painting frames achieved last year a productivity of 3 frames per man-hour. The owner wishes to increase this by 10% and has introduced new machinery. How many frames have to be made by the five employees if they spend 8 hours per day on the job?

Exercise nº 4

Boxes Ltd is a manufacturer of cardboard boxes producing 240 boxes per 100 kg of paper pulp. Currently, the firm receives 100 Kg of pulp per day and requires 3 hours of work to transform

each Kg. The manager thinks they can buy better quality pulp from another supplier at the same price, and this would increase production to 260 boxes per 100 Kg of pulp. The working hours would be increased by 8 hours per day.

Question 4.a- Indicate the current productivity and that obtained with the new supplier.

Knowing that the inputs and costs are as follows:

Hours of daily work: 300 h. With the new supplier 8 hours more: 308 h
Labour cost: €10/hour
Material (paper pulp): 100 kg/day
Material cost (paper pulp): €10/kg
Financial cost: capital: €350/day
Energy: €150/day

Question 4.b. Indicate the current multifactor productivity and that achieved with the new supplier.

Exercise nº 5:

The owner of the pizzeria Romana is worried about the competition and wants his business to be more productive. For this purpose, he decided to reform and modernise the kitchen (oven, working area, etc.). The cost of this productive factor would increase by €15,060/year (12% more). In this way, the quantity of pizzas can be increased, while reducing the consumption of gas and water, but increasing the shelf life of the pizza base and the other ingredients. The owner will also hire one more part-time worker, with an increase in the labour factor of €24,000/year (10% more). The global productivity (multifactorial) of the previous year was 3, and he would like to increase by 15%. If the unit price of each pizza is 15 euros and remains unchanged, by how many units should production increase?

Exercise nº 6:

The manager of an amusement park is considering investing in two alternative attractions. The models considered are the "Fire Dragon" and the "Hammer". The following data is available:

	Fire Dragon	**Hammer**
Capacity per year	100,000	110,000
Price per trip	€5	€5
Nº of employees	5 people	5 people
Cost per employee	€30,000 / year	€35,000 / year
Maintenance costs	€25,000 / year	€20,000 / year
Electricity consumption	€50,000 / year	€40,000 / year

Please advise the manager about the most profitable attraction to buy.

Questions:

Please work on each exercise

Working method:

1- Individual homework

Solving the exercises.

2- Discussion session

Discuss the responses to the questions and wrap-up

Evaluation

This activity will not be considered for evaluation purposes.