

Chapter 6 Solutions

Solution 6.1

Discuss the implications of the operating cost structure on profitability in the hospitality and travel sectors.

Most industries have characteristics or norms which distinguish them from other business sectors. The tourism, hospitality and leisure sector is no different. Hospitality, leisure and travel businesses tend to be quite capital and labour intensive with a high fixed and low variable cost structure. Demand for their products and services tends to fluctuate and they also sell a perishable product / service. Cost structure refers to the proportion of fixed and variable costs within the total operating cost structure of the business. A business with a high proportion of fixed costs to total costs would be said to have a high fixed cost structure, sometimes called high operating gearing. Travel agents, although not capital intensive, would have a high fixed cost operating structure. Outdoor catering firms would have a mainly high variable cost structure.

Operating risk is high where a business suffers from profit volatility and this occurs when profit is sensitive to small changes in key variables. Generally a business will have high operating risk or gearing when its cost structure is predominantly fixed. This is due to the fact that the pressure is on the business to achieve a required sales level to cover fixed costs. A business with a predominantly variable cost structure would have low operating risk or gearing as, should the business not achieve expected sales, the variable costs would not be charged.

Thus the main implications of the operating cost structure for a travel agency or hotel are.

- These businesses tend to have high fixed costs and high operating risk. Thus the pressure is on to generate adequate sales to cover fixed costs and make a profit.
- These type of businesses are quite revenue sensitive, thus management should focus on maximising the revenue side of the profit and loss account.
- As these business types have few variable costs, it would indicate that they have less latitude in terms of reducing costs, but greater scope to stimulate demand (by reducing prices in off-peak periods) and thus maximise contribution to cover fixed costs. In this regard we see that travel companies, accommodation providers and leisure fitness clubs, during their 'off-peak season', stimulate sales demand by reducing the price. As long as the selling price exceeds the variable costs then the sale makes a positive contribution towards fixed costs and profit. It is important to

emphasise that this is not about diluting the importance of cost control, but more about diverting resources into marketing and sales.

- Businesses with high fixed cost operating structures tend also to be quite capital intensive (which creates many of the fixed costs such as depreciation, rates, repairs and maintenance). Also, accommodation providers, restaurants and travel companies provide a perishable product (for a hotel, one bed-night lost is lost forever) with fluctuations in demand. Thus in off-peak periods, selling prices can be slashed to ensure a bed-night or air-flight seat makes a positive contribution towards fixed costs instead of a no-sell, zero contribution and a wasted opportunity.

Solution 6.2

a) Present the above information in a marginal costing profit statement format.

Marginal Costing Profit Statement

| | € |
|----------------------------|-------------|
| Sales | 4300 |
| <u>Less Variable costs</u> | |
| COGS | 500 |
| Payroll | 460 |
| UOE | <u>130</u> |
| Total Variable costs | 1,090 |
| Contribution | 3,210 |
| <u>Less Fixed costs</u> | |
| Fixed charges | 700 |
| Payroll | 1040 |
| UOE | <u>800</u> |
| | <u>2540</u> |
| Net profit | <u>670</u> |

b) Calculate the profit multipliers of the hotel based on a 10 per cent change

The approach here is as follows.

- Prepare a separate revised profit statement based on a percentage change in each variable.
- Calculate the percentage change in profit compared to original profit.
- Divide the percentage change in profit by the percentage change in the variable which in this case is 10%

| | Sales Price | Sales Volume | Variable Costs | Fixed Costs |
|----------------------|----------------|-----------------|-------------------|----------------|
| | € | € | € | € |
| Sales | 4730 | 4730 | 4300 | 4300 |
| Less Variable costs | | | | |
| COGS | 500 | 550 | 550 | 500 |
| Payroll | 460 | 506 | 506 | 460 |
| UOE | <u>130</u> | <u>143</u> | <u>143</u> | <u>130</u> |
| Total Variable costs | 1090 | 1199 | 1199 | 1090 |
| Contribution | 3640 | 3531 | 3101 | 3210 |
| Less Fixed costs | | | | |
| Fixed charges | 700 | 700 | 700 | 770 |
| Payroll | 1040 | 1040 | 1040 | 1144 |
| UOE | <u>800</u> | <u>800</u> | <u>800</u> | <u>880</u> |
| | <u>2540</u> | 2540 | 2540 | 2794 |
| Net profit | <u>1100</u> | <u>991</u> | <u>561</u> | <u>416</u> |

| | | | | |
|------------------------------------|----------|----------|----------|----------|
| 1. % change in Net profit | 0.641791 | 0.479104 | -0.16269 | -0.3791 |
| 2. % change in key variable | 0.1 | 0.1 | 0.1 | 0.1 |
| 3. Profit Multiplier | 6.41791 | 4.791045 | -1.62687 | -3.79104 |

c) Rank the multipliers in terms of their influence on profit.

- 1) Sales price 6.42
- 2) Sales Volume 4.79
- 3) Fixed costs 3.79
- 4) Variable costs 1.63

d) Comment on the profit multipliers calculated

The profit multiplier profile of the business suggests that profit is more sensitive to the revenue side of the profit and loss account than the cost side. Thus greater emphasis should be placed on maximising sales and revenues while at the same time controlling costs. This business would be classified as a high fixed operating cost structure with fixed costs amounting to 70% of the total operating costs of the business. The profit multipliers would indicate that the business is more market oriented than cost oriented due to the high fixed operating cost structure and thus high operating risk. Also the fact that the business is a hotel which deals with a perishable product and is capital intensive means that the business should be more market oriented while at the same time controlling costs.

Solution 6.3

a) Budgeted profit presented in a marginal costing format

| | Company 1 | Company 2 | Company 3 |
|----------------|---------------|---------------|---------------|
| | € | € | € |
| Sales | 100000 | 100000 | 100000 |
| Variable costs | <u>80000</u> | <u>60000</u> | <u>40000</u> |
| Contribution | 20000 | 40000 | 60000 |
| Fixed costs | <u>30000</u> | <u>50000</u> | <u>70000</u> |
| Net Profit | <u>-10000</u> | <u>-10000</u> | <u>-10000</u> |

b) The budgeted break-even point in both units and sales value

| | Company 1 | Company 2 | Company 3 |
|-----------------------|--------------|--------------|--------------|
| Fixed. costs | <u>30000</u> | <u>50000</u> | <u>70000</u> |
| Contribution per unit | 1.00 | 2.00 | 3.00 |
| Break-even units | 30,000 units | 25,000 units | 23,333 units |
| Break-even revenue | €150,000 | €125,000 | €116,665 |

c) The impact on profits of an increase of 10 per cent in sales volume and price

| | Company 1 | | Company 2 | | Company 3 | |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | SP | SV | SP | SV | SP | SV |
| Sales | 110000 | 110000 | 110000 | 110000 | 110000 | 110000 |
| Less Variable costs. | <u>80000</u> | <u>88000</u> | <u>60000</u> | <u>66000</u> | <u>40000</u> | <u>44000</u> |
| Contribution | 30000 | 22000 | 50000 | 44000 | 70000 | 66000 |
| Less Fixed costs | <u>30000</u> | <u>30000</u> | <u>50000</u> | <u>50000</u> | <u>70000</u> | <u>70000</u> |
| Net profit | <u>0</u> | <u>7500</u> | <u>0</u> | <u>-6000</u> | <u>0</u> | <u>4000</u> |

d) The profit multipliers for sales volume and sales price variables

| Company 1 | Company 2 | Company 3 |
|-----------|-----------|-----------|
|-----------|-----------|-----------|

| | Sale | Sales | Sales | Sales | Sale | Sales |
|-----------------------|--------|-------|--------|-------|--------|-------|
| | volume | price | volume | price | volume | price |
| % change profit | 100% | 25% | 100% | 40% | 100% | 60% |
| % change key variable | 10% | 10% | 10% | 10% | 10% | 10% |
| Profit multiplier | 10 | 2.5 | 10 | 4 | 10 | 6 |

e) Briefly comment on your answers to (d) in relation to the distribution between each companies fixed and variable expenses

As can be seen from the data company 1 has a low fixed operating costs structure whereas company 3 has a high fixed cost operating structure. All three company's are equally sensitive to changes to sales price but one can see that the company with the high fixed costs structure (company 3) has the highest sensitivity rating for sales volume changes. One can also see that the company with the lowest level of fixed costs has the lowest sensitivity rating for sales volume fluctuations. These sensitivity ratings increase for company 2 with its higher fixed costs. This makes sense as a business with high fixed costs must generate a high sales volume to cover these fixed costs and thus profit is more sensitive to changes in these key variables.

Co 1 10% increase or decrease in sales results in profit increasing or decreasing 25%

Co 2 10% increase or decrease in sales results in profit increasing or decreasing 37.5%

Co 3 10% increase or decrease in sales results in profit increasing or decreasing 50%

Co 3 most sensitive due to different cost structure High fixed costs relative to variable

Costs explain

Comment on the sales price PM and how as SP increases there are no similar increases in fixed or variable costs

Question 6.4

a) Calculate the sensitivity of profit to a 10 per cent change

| Restaurant | | Sales Price | Sales Vol | Variable Costs | Fixed Costs |
|--------------------------------|----------------|--------------------|------------------|-----------------------|--------------------|
| Covers sold | 100,000 | | | | |
| Average selling price per meal | €10 | | | | |
| | € | € | € | € | € |
| Sales revenue | 1,000,000 | 1,100,000 | 1,100,000 | 1000000 | 1000000 |
| Less variable costs | <u>200,000</u> | <u>200000</u> | <u>220,000</u> | <u>220000</u> | <u>200000</u> |
| | | 0 | | | |
| Contribution | 800,000 | 900,000 | 880,000 | 780,000 | 800,000 |
| Less Fixed costs | <u>600,000</u> | <u>600000</u> | <u>600000</u> | <u>600000</u> | <u>660000</u> |
| Net Profit | <u>200,000</u> | <u>300,000</u> | <u>280,000</u> | <u>180,000</u> | <u>140,000</u> |
| Increase profit | | 0.5 | 0.4 | -0.1 | -0.3 |
| Increase in key variable | | 0.1 | 0.1 | 0.1 | 0.1 |
| Profit multiplier | | 5 | 4 | -1 | -3 |

| Outdoor catering | | Sales Price | Sales Vol | Variable Costs | Fixed Costs |
|--------------------------------|----------------|--------------------|------------------|-----------------------|--------------------|
| Covers sold | 100,000 | | | | |
| Average selling price per meal | €10 | | | | |
| | € | € | € | € | € |
| Sales revenue | 1,000,000 | 1,100,000 | 1,100,000 | 1000000 | 1000000 |
| Less variable costs | <u>600,000</u> | <u>600,000</u> | <u>660,000</u> | <u>660000</u> | <u>600000</u> |
| | | 0 | | | |
| Contribution | 800,000 | 500,000 | 440,000 | 340,000 | 400,000 |
| Less Fixed costs | <u>200,000</u> | <u>200000</u> | <u>200000</u> | <u>200000</u> | <u>220000</u> |
| Net Profit | <u>200,000</u> | <u>300,000</u> | <u>240,000</u> | <u>140,000</u> | <u>180,000</u> |
| Increase profit | | 0.5 | 0.2 | -0.3 | -0.1 |
| Increase in key variable | | 0.1 | 0.1 | 0.1 | 0.1 |
| Profit multiplier | | 5 | 2 | -3 | -1 |

b) Rank the profit multipliers in order of size

| Restaurant | | Outdoor catering | |
|-------------------|---|-------------------------|---|
| Sales price | 5 | Sales price | 5 |
| Sales Volume | 4 | Sale volume | 2 |
| Variable costs | 1 | Variable cost | 3 |
| Fixed costs | 3 | Fixed costs | 1 |

c) Comment on the profit multiplier profile of the two businesses

The restaurant has a high fixed operating cost structure with fixed costs amounting to 75% of total costs. Thus it can be seen that the sales price and volume multipliers are significantly higher than the cost multipliers. Thus this business would be considered more market oriented where profit is more sensitive to the revenue side of the profit and loss account and thus the business should focus on maximising sales while at the same time controlling costs. Generally businesses with high operating gearing have to generate sufficient sales to cover the high fixed costs they create.

The outdoor catering company would be considered a more cost orient business where variable costs amount to 60% of total costs. One can see from the profit multipliers, that while sales price has the highest rating at 5, variable cost has a rating of 3 higher than sales volume. Thus this business should focus on minimising costs as least as much as maximising sales. This business would be considered to have low operating gearing where if sales are low variable costs are also low.