QSF

Quantiative
Sales Forecasting

Answers

Answer to 4 quarter moving average walkthrough on page 7

Year and Quarter	Sales £000	4 Quarter Total	8 Period Total	4 Quarter moving average (Trend)	Variation
2020 Q1	72				
2020 Q2	73				
		289			
2020 Q3	74		579	72.38	1.62
		290			
2020 Q4	70		581	72.63	-2
		291			
2021 Q1	73		583	72.88	0.12
		292			
2021 Q2	74		582	72.75	1.25
		290			
2021 Q3	75		579	72.38	2.62
		289			
2021 Q4	68		579	72.38	2.62
		290			
2022 Q1	72		582	72.75	1.25
		292			
2022 Q2	75		586	73.25	1.75
		294			
2022 Q3	77				
2022 Q4	70				

Answer to practice question 1 on page 12

Month	Number of monthly diners
May	140
June	200
July	280
Aug	280
Sept	290
Oct	350
Nov	368
Dec	380

3 Period moving average for May to July is 206.67

140 + 200 + 280 / 3 = 206.67

3 period moving average for Oct – Dec is 366

350 + 368 + 380 / 3 = 366

Difference is 366 – 206.67 = 159.33

Answer to practice question 2 on page 13

Month	% occupancy	3 period moving average
May	23	
June	32	37
July	56	62.67
Aug	100	66.33
Sept	43	73.67
Oct	78	47.33
Nov	21	63
Dec	90	

Answer to practice question 3 on page 14

Month	Number of passengers	3 period moving average	Variation
Jan	1235		
Feb	1050	1081	-31
March	985	1000	-15
May	965	982.67	-898
June	998	1094.33	-96.33
Oct	1320	1112.67	207.33
Nov	1020	1228	-208
Dec	1344		

Answer to practice question 4 pages 15 and 16

Year and Quarter	Sales £000	4 Quarter Total	8 Period Total	4 Quarter moving average (Trend)	Variation
2020 Q1	28				
2020 Q2	49				
		168			
2020 Q3	56		343	42.88	13.12
		175			
2020 Q4	35		357	44.62	-9.62
		182			
2021 Q1	35		371	46.38	-11.38
		189			
2021 Q2	56		385	48.13	7.87
		196			
2021 Q3	63		399	49.88	13.12
		203			
2021 Q4	42		413	51.63	-9.63
		210			
2022 Q1	42		427	53.38	-11.38
		217			
2022 Q2	63		441	55.13	7.87
		224			
2022 Q3	70				
2022 Q4	49				

- A = 51.63
- B= -9.63
- C= 53.38
- D= -11.38

Answer to practice question 4 pages 15 and 16

Interpretation of findings

- Lower sales revenue in Q1s and Q4s when compared to Q2 and Q3
- Variation in winter quarters (Q4 and Q1) are negative, which means sales are below trend. Probably due to customers not wanting to drive or make kit cars in the winter.
- Between 2020 and 2022 the <u>moving averages</u> have increased, the trend is upwards suggesting growth. The upward trend in <u>sales</u> in that period supports this conclusion.

Answer to practice question 5 on page 17

Note: This was a general question, in an exam you would need to be able to apply your statements to a given business.

Limitations

- QSF is future predictions made from past data
- Extrapolation of past data to make sales forecasts can be problematic because of the dynamic nature of business
- External factors may have had an impact on previous sales demand e.g. sales of face masks due to the pandemic
- Demand for products and services may be dependent upon PESTLE factors

Counterbalance (uses)

- Time series data is numerical which makes it easy to read and interpret, so a business would be able to quickly draw conclusions from it
- No issue with bias in comparison to qualitative techniques such as market research
- Time series analysis helps a business to identify seasonal patterns e.g. being busier in the winter
- Data fluctuations can be smoothed out using time series analysis to help a business to identify trends