

Measuring Temporal Performance in Tourism

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Chapter 8 Measuring Temporal Performance

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Chapter Learning Outcomes

At the end of this chapter you will be able to -

- Be aware of the range of data and tools that individual tourism businesses can use to improve their temporal performance.
- Be able to use the metrics to improve individual business temporal performance.
- Be aware of the key metrics used by tourism authorities in understanding the impact of seasonality on tourism at an industry level.

1. Introduction

This chapter introduces the key metrics used by tourism businesses in improving the temporal performance of their businesses, specifically in the areas of occupancy, revenue and profit. The underlying theory of temporal pricing was explored in detail in the previous chapter. In this chapter we focus on the real life application of these theoretical concepts and review the range of metrics available to individual tourism businesses. The chapter will also raise some of the real life trade-offs facing tourism businesses in trying to maximise profits in a dynamic marketplace. In addition we will also consider what these practices mean for individual tourist consumers and the metrics and tools available to consumers to benefit from tourism businesses' desire to maximise the utilisation of their resources. Metrics are a range of quantitative measures commonly used to track and compare performance.

2. Using the tools of Temporal Pricing at the micro or individual business level to improve business performance.

In this chapter we will explore how two of the key players in the tourism industry (hotels and airlines) use a range of metrics in managing the temporal nature of their products. Both hotel and airline pricing strategies are strongly influenced by the perishability of their product and the seasonal nature of the tourism industry. We will approach the use of the metrics and price setting from the individual or team responsible for ensuring that a company's prices match a customer's willingness to pay. This will vary within each organization but ultimately there will

be a person or team responsible for the setting of prices. As noted in the previous Chapter, hotels and airlines use what is essentially the same process of trying to maximize revenue in situations of constrained supply and a perishable product where consumers have differing perceptions of value. This then leads to the practice of charging different prices to different customers and to the same customers at different time periods.

Starting with the hotel sector, there is a well-developed set of metrics which are shared and contributed to by individual hotels globally. Although there are several third party providers of these metrics, the best known and most widely available are those provided by Smith Travel Research, usually referred to as STR. In this chapter we will introduce and illustrate how some of the key reports are utilised by hotels in the price decision making and other revenue management techniques. STR is the largest provider of hotel data in the world. Founded in 1985, it aims to provide premium data benchmarking, analytics and marketplace insights for global hospitality sectors. Over 68,000 hotels from 180 countries share their data with STR which is then analysed and presented in the STAR report and other reports for use by the global hotel industry.

The STAR report provides a succinct overview of performance relative to the competitor set. It illustrates a chosen set of competitor hotels to allow a hotel to compare or benchmark its performance to what might be described as its close competitor market i.e., similar hotels in the local market. It uses the key metrics of Occupancy, ADR (average daily rate), and RevPAR (revenue per available room) for each property and its competitor set as well as Index numbers and Percent Changes. The data displayed covers four points in time: Current Month, Year to Date, Running 3-month (i.e., the average of the current and previous two months), and Running 12-month (i.e. the average of the current and previous 11 months).

The first step is to define and understand how the key metrics are calculated.

- Occupancy is simply 'The number of rooms sold during a specific time period; expressed as a percentage of all rooms available to sell during that same period'

$$\text{Total rooms sold} / \text{Total rooms available} = \text{Occupancy percentage}$$

- Average Daily Rate (ADR) is 'The average (mean) selling price of guest rooms during 'a specific time period, such as a day, week, month or year'.

$$\text{Total Room Revenue} / \text{Total Rooms Sold} = \text{ADR}$$

- Revenue per Available Room (RevPAR) is the average revenue generated by each available guest room during a specific period. This is often regarded as the key metric as it indicates how successful a hotel is at maximising revenue with the available room resource.

$$\text{ADR} \times \text{Occupancy Percentage} = \text{RevPAR}$$

Figure 1 Monthly 'Performance at a Glance': an Example of Key Hotel Performance Metrics

Tab 2 - Monthly Performance at a Glance - My Property vs. Competitive Set

For the Month of: February 2020 Date Created: March 21, 2020 Currency: British Pounds

February 2020									
	Occupancy (%)			ADR			RevPAR		
	My Prop	Comp Set	Index (MPI)	My Prop	Comp Set	Index (ARI)	My Prop	Comp Set	Index (RGI)
Current Month	76.3	77.2	98.8	248.68	230.71	107.8	189.69	178.07	106.5
Year To Date	71.7	72.5	98.8	242.66	225.31	107.7	173.91	163.42	106.4
Running 3 Month	71.7	74.3	96.4	250.44	228.01	109.8	179.44	169.39	105.9
Running 12 Month	82.1	81.8	100.5	302.25	274.15	110.3	248.29	224.16	110.8

February 2020 vs. 2019 Percent Change (%)									
	Occupancy			ADR			RevPAR		
	My Prop	Comp Set	Index (MPI)	My Prop	Comp Set	Index (ARI)	My Prop	Comp Set	Index (RGI)
Current Month	-2.6	7.6	-9.5	-1.2	-5.3	4.4	-3.8	1.9	-5.5
Year To Date	2.0	2.4	-0.3	-1.6	-4.6	3.2	0.5	-2.3	2.9
Running 3 Month	-0.8	1.0	-1.8	1.0	-3.0	4.1	0.2	-2.0	2.3
Running 12 Month	3.6	2.4	1.2	4.0	7.9	-3.5	7.8	10.4	-2.4

STR GLOBAL, Ltd

To see how the RevPAR is calculated if we look at the figures in the table above for the current month

$$ADR\ 248.68 \times Occupancy\ Percentage\ 76.3\% = RevPAR\ 189.69$$

Looking at how the individual metrics are calculated brings home that maximising the revenue is actually a balancing act between occupancy and room price. Simple economics suggests that if we increase room price this will tend to reduce occupancy and if we want to increase occupancy we need to lower room prices. This is an over-simplification but this logic underlies the balancing act hotel managers and revenue managers undertake every day. Once it is understood that managing hotel room revenue is a balancing act between price and occupancy, then the value of the STAR report becomes obvious as it allows us to review the success of our balancing act compared to our competitor set.

If we use RevPAR as a measure of relative success and refer to Table 1 we can see that the hotel that this report refers to is doing relatively well. The RevPAR is higher than the competitor set for all the time periods: e.g., for the current month the RevPAR is 189.69 for our hotel compared to 178.07 for the competitor set. A similar picture can be seen for the other time periods as well. Note the Index RGI (Revenue Generating Index) figure gives us a quick way of gauging our success: a score of over 100 means that a hotel is doing better than the average of its competitor set. The higher the figure indicates a better performance. Interestingly in this case, although our hotel is doing better than our competitor set, the

relative success seems to be under pressure in that the Running 12 month RGI is 110.8, showing a stronger performance than the last Running 3 Month period RGI 105.9. What is useful is that changes in the competitive position are flagged up for consideration for the hotel management team.

For example, our hotel is doing well overall but the three month RGI figure suggests that the gap in performance with the competitor set is narrowing. The table above indicates that occupancy for the property is doing less well than the competition set. The picture becomes even clearer if we consider the second part of the table and consider the percentage changes where for the current month the hotel is showing a -9.5% decline in occupancy compared to February 2019, causing a fall in RevPAR of -5.5% compared to February 2019. The increase in ADR of 4.4% in 2020 compared to February 2019 looks like it has caused a fall in occupancy and a worse RevPAR compared to February 2019. So pushing up room rates has been counterproductive and reduced the overall RevPAR.

At this point it is worth noting that we have only been considering the summary report. Much more detailed information is provided in the full competitor set report which gives monthly breakdowns over an 18 month period. However, the metrics used are the same though more detailed, enabling an ongoing review of the hotel's competitive position over time. The use of visual data (indices and graphs) allows for easy review of the market trends.

However the STAR reports are not the only metrics that a hotel manager will be using. There will be similar data produced internally at the property level which tends to be reviewed and acted upon several times a day. In addition, most of the major chains have their own data analysis services which supply data on temporal trends and forecasts to aid decision-making. Indeed a major part of the offer for many hotel chains to independent hotel owners to join their chain is the revenue management support systems they offer. For example the IHG group claim their Revenue Management systems are world beating. Their PERFORM price optimisation system provides daily price recommendations to hotel and revenue managers with a transparent methodology:

"The benchmark rate is an aggregation of competitor prices. By comparing the remaining capacity, remaining demand, competitor rates, and our current BFR [best flexible rate], revenue managers can intuitively judge the reasonableness of the price recommendations. As suggested by the other tabs, price optimization also provides a capability to drill down into demand forecasts, competitive rates, current bookings, and additional pricing analysis" (Koushiak, 2012:54).

Airlines use a similar approach although there is not a central database like STR and the data is individual to the airline. Both industries face similar issues of:

1. the number of seats or rooms available
2. the amount of time remaining to sell the seat or room
3. what competitors are charging for the similar seat or room

Airline revenue management pricing strategies are based on a sliding scale involving price, inventory, marketing and various sales channels to determine profitable plane ticket prices

based on a range of factors such as willingness to buy, competition and destination. Furthermore, the use of algorithms and continuous data collection allows airlines to have true dynamic pricing reacting continuously to changing market conditions, with prices reflecting measures of demand such as number of views of a particular flight or location of an online enquiry.

Table 4 summarises and compares the different metrics used by airlines and hotels.

Table 4

Hotels	<p>Revenue Management The art and science of predicting real-time customer demand and optimizing the price and availability of products to match that demand.</p>	<p>Occupancy The percentage of available rooms that were sold during a specified period of time. Occupancy is calculated by dividing the number of rooms sold by rooms available. Occupancy = Rooms Sold / Rooms Available.</p>	<p>Average Daily Rate (ADR) A measure of the average rate paid for rooms sold; calculated by dividing room revenue by rooms sold.</p>	<p>Revenue per available room (RevPAR) A metric used to assess how well a hotel has managed their inventory and rates to optimize revenue. Calculated by multiplying occupancy by ADR.</p>
Airlines	<p>Revenue Management This management technique maximizes revenue by enabling the best mix of revenue paying passengers through yield management that involves optimum seat sales in terms of optimum timing and price based on network and fare strategy.</p>	<p>Passenger Composition Component ratio of multiple passenger groups including businesses, individual and leisure travellers</p>	<p>Revenue Passenger Kilometres Total distance flown by revenue-paying passengers aboard aircraft. Revenue-paying passengers x transport distance (kilometres).</p>	<p>Yield Unit Revenue per revenue-paying passenger per kilometre (or mile). Calculated as revenue ÷ revenue passenger-kilometres.</p>

Up to this point we have focussed on the suppliers of hotel and airline services and how they react to variations in demand. However the market is a dynamic system and customers also have a range of metrics available which they will use to try to optimise their own position by trying to get the best value deal from their individual perspective. Indeed, some organisations supply data to both service providers and consumers. Expedia is an example of an Online

Travel Agency (OTA) that sells itself as more than a promoter and distribution channel to hotels but also as a major source of data to its suppliers. It also provides the means to potential customers to compare the prices and offers for a significant section of the market at any point in time. OTAs also provide metrics to help customers consider alternatives such as indicators of how busy a particular travel destination is on a particular date.

These Online Travel Agents are becoming of increasing importance both to suppliers and customers in the tourism sector. Some of the best known OTAs with global presence include Booking.com; Expedia; Last Minute.com; Trivago; Travel Supermarket; Late Rooms.com; Hotels.com. Many of these OTAs deal with both accommodation and flights as well as other destination services such as car hire. One of the most popular for flights is Skyscanner whose tag line is that they will

"price check with 1,200 travel companies so you don't have to. Sign up for Price Alerts and we'll tell you as soon as fares change on a flight you like"

[https://www.skyscanner.net/about-us/why-skyscanner.](https://www.skyscanner.net/about-us/why-skyscanner)

A flight booking site provides a range of options to potential travellers, driven by the use of smart search filters. A customer can search the number of flights, route stops, departure times, available flights by price, seat availability by class of travel etc. In effect customers have a range of metrics to help make a choice reflects their priorities and is therefore the best value option for them. It is even possible to track prices so that consumers are informed if prices have increased or fallen for their preferred departure date. To illustrate, the authors undertook a search for flights to Hong Kong from Manchester for the month of January 2021. There were 395 options, the cheapest flight being £395 return, the fastest flight being £874. There were only two differences in times, the cheapest flight having a five hour wait in London Heathrow airport as a connection point for the onward flight to Manchester. This information took less than two minutes to obtain.

There are also tools to help travellers identify the cheapest months, when it is best to book in advance and how far in advance. More and more metrics are becoming available and customers are becoming increasingly aware of how to manipulate the temporal variations in demand and price to obtain the best value for themselves. Thus the rapid development of the Internet has provided travellers the opportunity to search and compare travel-related products often via OTAs. At the same time airlines are developing their own online pricing strategies to maximise their revenue (Lee *et al.*, 2020).

Although the range of data provided to customers allows them to act in a way that maximises their value for money, as seen above, there is potential conflict as the primary role of OTAs is to act as a booking agent. Therefore the way the data is presented may be to advantage the booking agent rather than the customer. There has been a recent investigation by the UK's Competition & Markets Authority (CMA) into this issue (see Vignette 1). The CMA is the UK's official agency that oversees and investigates whether markets are operating fairly,

Vignette 1 – CMA investigation into booking site practices

This investigation examined several practices, including:

- *Search results: how hotels are ranked after a customer has entered their search requirements, for example to what extent search results are influenced by other factors that may be less relevant to the customer's requirements, such as the amount of commission a hotel pays the site.*
- *Pressure selling: whether claims about how many people are looking at the same room, how many rooms may be left, or how long a price is available, create a false impression of room availability or rush customers into making a booking decision.*
- *Discount claims: whether the discount claims made on sites offer a fair comparison for customers. For example, the claim could be based on a higher price that was only available for a brief period, or not relevant to the customer's search criteria, for example comparing a higher weekend room rate with the weekday rate for which the customer has searched.*

The conclusion the CMA drew was that many of these booking sites were potentially misleading. They published a set of principles in February 2019 to ensure customers are being treated fairly.

Do

- *be transparent about rankings and 'premium' listings - if the money the business earns affects the search results make it clear for the customer to see*
- *show customers the total price up front so they are clear on the cost of the purchase and aren't stung by hidden charges*
- *be honest and tell the whole story if using availability or popularity messaging (for example, "Only 2 rooms left at this price to book on this site", "15 people looking at this hotel for a range of different dates")*

Don't

- *use misleading strike-through pricing (a visual treatment showing a line drawn through the original price and the second lower price offering) and discount claims; discounts must be genuine and compare the same types of rooms for the same stay dates.*
- *hide unavoidable charges, like city taxes and resort fees, until late in the booking process*

(CMA, 2019)

3. Using seasonal and temporal data for tourism at the national and regional level.

National & regional tourism bodies use a range of data to manage their tourism resource where the problems of seasonality and perishability give rise to the need for marketing campaigns to extend the tourism season or create new demands outside the traditional season. There is a wealth of data available in the public domain which is utilised by tourism bodies such as destination management organisations (DMOs) to benchmark and identify competition and market opportunities for their destination areas. For example the UNWTO <https://www.unwto.org/tourism-statistics-data> systematically gathers tourism statistics from countries and territories around the world into a vast database that constitutes the most comprehensive statistical information available on the tourism sector. This database is comprised of over 145 tourism indicators which are updated regularly. The UNWTO

introduced the Tourism Data Dashboard <https://www.unwto.org/unwto-tourism-dashboard> which provides statistics and insights for inbound and outbound tourism at the global, regional and national levels. Data covers tourist arrivals, tourism's share of exports and its contribution to GDP, source markets, seasonality and accommodation occupancy.

Data is also produced at a European level by Eurostat <https://ec.europa.eu/eurostat/web/tourism/overview>, which provides some interesting observations on the seasonal trends in the European Union. For example in 2019, July and August accounted for nearly one third of all annual nights spent in tourist accommodation in the EU. It also shows that more than one in four EU residents' tourism nights in the months of May and September were spent by older people aged 65 or over.

At the country level there tends to be detailed temporal data published by the National Tourism Bodies. In Great Britain for example, a wide range of temporal data is published by Visit Britain and Visit England <https://www.visitbritain.org/england-research-insights>. In some cases data is available at a regional level such as Yorkshire, in terms of the number of visits, nights and spend by international, domestic and day visitors on a monthly basis. It is sometimes possible to obtain annual data down to a local government level for these metrics.

Data for individual attractions at a destination, regional or national level tends to be more limited. For example, in the UK, the *Annual Survey of Visits to Visitor Attractions: Latest results* <https://www.visitbritain.org/annual-survey-visits-visitor-attractions-latest-results> contains basic information on the number of visits, prices and marketing expenditure. There are also comparisons with previous years and trend analysis including sub-national areas such as Yorkshire, while some analysis is available at a local government level.

4. Chapter Summary

This chapter has provided an introduction into how the availability and use of metrics in temporal demand and supply in the tourism sector can be used to guide pricing decisions to maximise revenue for operators. Although the focus has been on the supply side in terms of the detailed use of the metrics as temporal performance indicators, the demand side, from the viewpoint of customers, was also considered. The use of OTA's by customers enables them to maximise their value, in terms of booking flights and accommodation. The chapter concluded with a brief introduction to the range of data available at a global, regional and national levels.

Self-reflection Questions

1. Using the data in Figure 1 for *'my property for the month of February'* would you recommend the hotel to raise its room rates by 10% if this leads to a fall in occupancy of 5% on room bookings? What arguments would influence your recommendation?

2. Using one of the OTAs, compare the flight costs for a destination of your choice and identify possible reasons why there are different prices on different days of the week for the same journey.
3. Access the UNWTO web site and search for the latest data on tourism arrivals for your home country. Compare how the data has changed from the previous year and identify possible reasons.
4. Search the Visit England site for data on occupancy in the regions of England and compare the Occupancy, ADR and RevPAR for the different regions. Which region has the highest Occupancy, ADR & RevPar for the month of August and how does this compare for the month of January?

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