



# The London Hotel Data Analysis

## — The Impact On Hotel Revenue

Technology, Media and Data (MAN 2130)

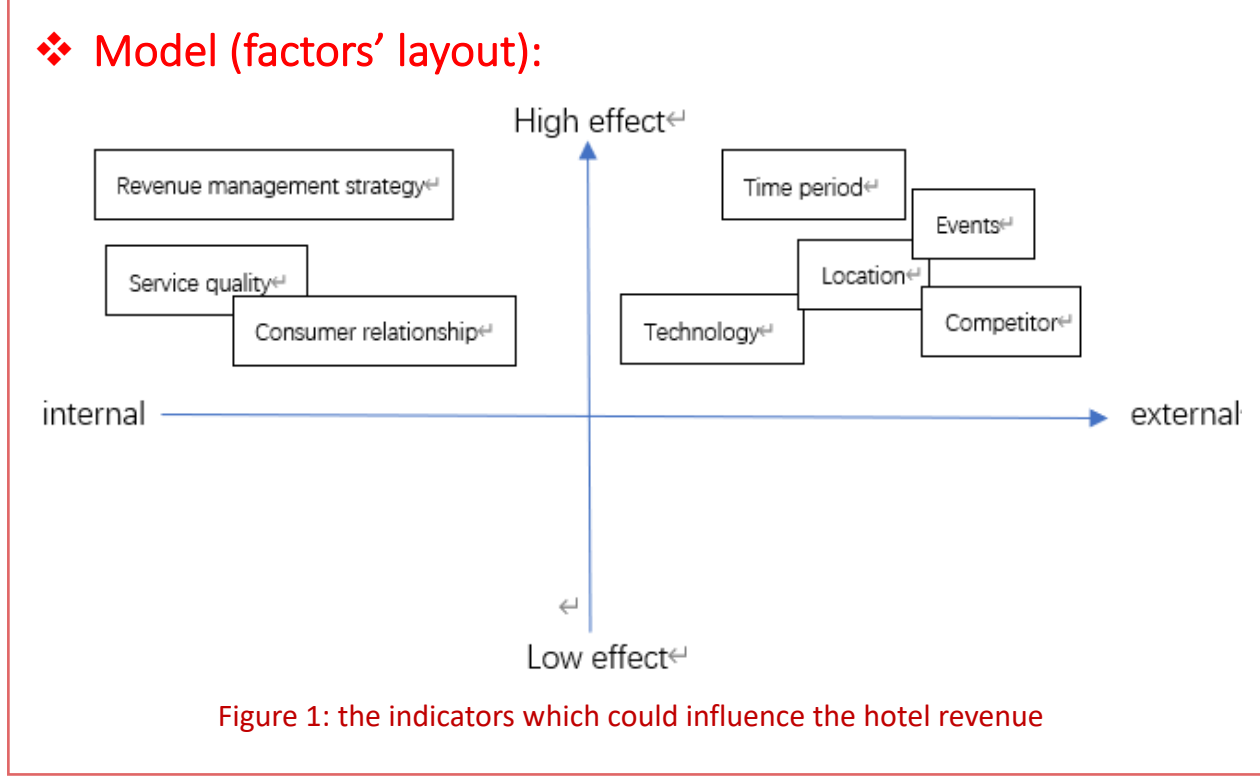
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### Introduction

- ❖ **Significance & research objective:**
  - Revenue is a vital indicator of corporation's success, which is impacted by numerous items inside or outside the company.
  - Under the fierce competition amid the different levels of hotel in London, it is necessary that a detailed research could facilitate the hospitality development from previous record analysis and tendency predication (Revxpert, 2016).
- ❖ **Research questions:**
  - Could seasonality determine the revenue variations?
  - Whether the location of the hotel is related to its income?
  - Will higher occupancy in different classes cause increasing income?
  - Are there any relationships between emergencies (Olympics & Brexit) and the revenue receivables?
- ❖ **Hypothesis and advances:**
  - Seasonality would alter the revenue in great extent.
  - The choice of hotel location dominates the receivable income.
  - Higher occupancy rate soars the total revenue in all classes.
  - Emergencies could influence the revenue instantly.
- ❖ **Data filtering:**
  - Raw data sources of market and submarket London was selected.
  - Date column was coordinated into recognisable format while null values are rid out.
  - All the operative records are categorised into Time, Indicative and Class datasets.
  - Room Occupancy, ADR, RevPAR, Demand & Supply were classified into Indicative File.
  - Six hotel districts were transferred into a Location File in terms of geographical statistics for further study.
  - Six hotel districts corresponded to specific zones in reality.
- ❖ **Data Operation:**
  - Figure 2: Average revenue fluctuation was connected with quarter-formed timeline (Time & Indicative).
  - Figure 3&4&5: Heatmap distribution shade by colours; Room Occupancy and Revenue were displayed into geographical layouts; ADR, Occupancy, and Revenue were connected with six hotel districts into bar-charts (Time, Indicative, and Location).
  - Figure 6&7: Percentages of Occupancy and revenue were compared in different areas; The amount of demand and supply were offered for research (Indicative, Location, and Class).
  - Figure 8: The difference of demand and revenue were drawn (Indicative and Time).
- ❖ **Results:**
  - Hypothesis 1 was true. Peak season could appeal more customers due to the moderate weather and prosperous events.
  - Hypothesis 2 was true. The prosperity of the surrounding location could modify hotel's income.
  - Hypothesis 3 was biased in some extents. High occupancy of hotels is not directly relevant to high incomes for all classes.
  - Hypothesis 4 was partly biased. The time duration in revenue fluctuation depends on the market judgment of the emergency.

### Literature Review

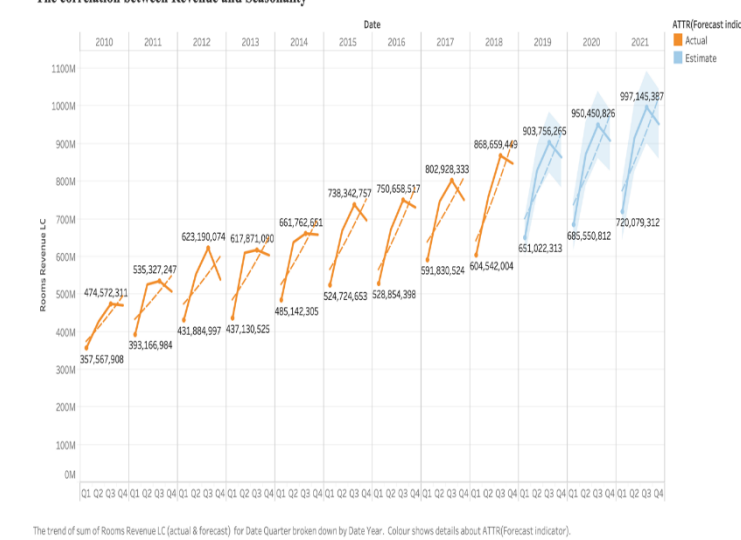
- ❖ **Definition:**
    - Hotel revenue refers to operating income earned by hotel through sales, rental, service provision and so on. The most of revenue derives from room and F&B (Sainaghi, 2010).
  - ❖ **The importance of hotel revenue:**
    - The hotel revenue is the cornerstone of success hotel, so it has significant impact during operating (Ivanov, 2014).
  - ❖ **Factors influencing hotel revenue:**
- External factors:**
- Time period (Seasonality): hotel guests will be flexible during different season (Wawira, 2016). Hotel revenue will be influenced by the occupancy (Saito et al., 2019).
  - Technology: hotel builds online relationship with customers, so technology influences the room occupancy in hotel (Eisen, 2020). Also, the IT system can analyze the market and make future strategy (duettocloud.com, n.d.).
  - Location: sights and various service will influence the hotel revenue (Eisen, 2020).
  - Events: hotel can have more consumers and also sell room with higher price during some special events (Garcia, 2020).
  - Competitor: a hotel needs unique service or facilities which can be differentiated with others, so they can attract more customers (Quinn, 2009).
- Internal factors:**
- Revenue management strategy: Revenue management can predict consumer demand and behaviours (Tyrrell, 2017). Besides, it means that hotel can sell right room for right price to right person at right time in right place (ibid.).
  - Service quality: hotel consumers value the service quality, they prefer to stay at hotel which has the high service quality level (Kandampully et al., 2011).
  - Consumer relationship (loyalty): the positive customer relationship can promote people become the loyalty consumers to increase the revenue (Kandampully et al., 2011).



### Findings & Discussion

#### Finding on Seasonality

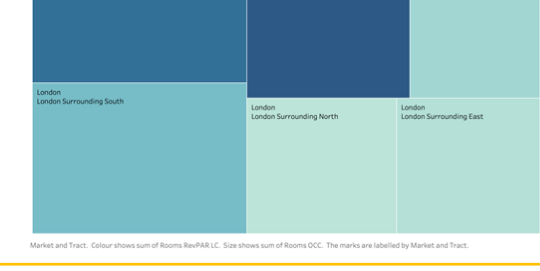
Figure 2: the correlation between Revenue and Seasonality from 2010-2018



- Finding : Q3 mostly hosted the maximum number of residents (1.35 times asQ1)**
- The reason behind will attribute to the distinction of local climates and the time distribution of public events.
  - Coldness of winter and moist of spring are two killers that keep tourists away from London (Smithers, 2012). Summer and autumn are the best times for London's grand parades and public activities (Quinn, 2009).
  - As the London convention industry matures, the estimated occupancy will exceed 130,000 in 2021 without contingencies, but the pandemic will defer its achievement.

#### Finding on Location

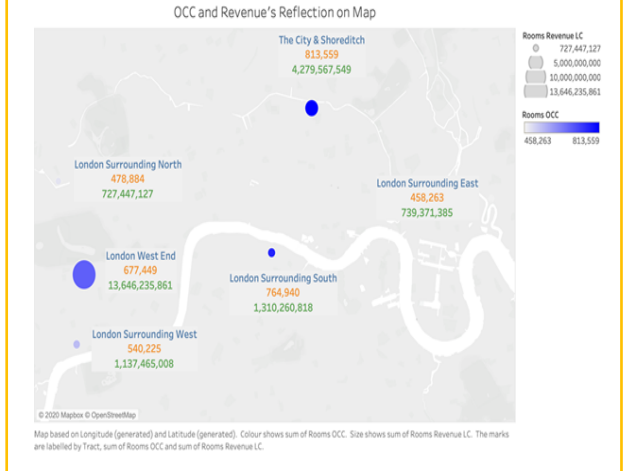
Figure 3 : The Room RevPAR and sum of Rooms OCC in six districts



**Colour : sum of room RevPAR = Revenue per available room**

**Size : sum of room OCC = number of rooms occupied/total number of rooms available.**

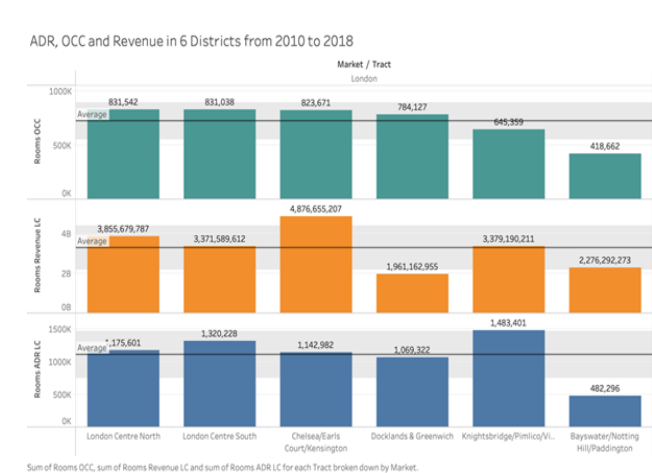
Figure 4 : Room Revenue LC and Room OCC in six districts from 2010 to 2018



- Finding : Hotels in the City & Shoreditch have the highest occupancy among six districts, but the area with the highest revenue is the London West End.**
- Aggregation Effect** was implemented when tourists prefer to visit the attractions surrounded in London West End (Pickford, 2019).
  - People in the middle-class or near the London West End who enjoyed art were more inclined to visit the London West End to enjoy a cost-efficient trip (Beard, 2019).

#### Finding on Revenue Management

Figure 5 : The sum of Rooms OCC, sum of Rooms Revenue LC and sum of Rooms ADR LC in six districts from 2010 to 2018.



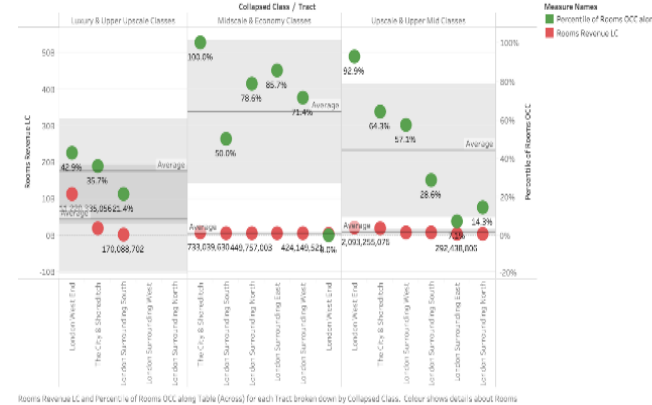
**ADR: Average Daily Rate: Room revenue divided by the number of rooms sold.**

**Finding:** Different hotels in the same area apply revenue management strategies in their operations, that is, by reducing room rates to increase occupancy, they ultimately achieve the goal of increasing revenue.

- Hotel revenue available per room in Knightsbridge has exceed the average level and over 80% residents earned more than 100,000 pounds (Pickford, 2019).
- Although hotels in Chelsea and in Knightsbridge were close to each other, consumers prefer to stay in Chelsea rather than Knightsbridge, because the former was cheaper than the latter.
- Overall, the price strategy can help hotel promote the revenue and it is one of the revenue management.

#### Finding on Occupancy in Different Classes

Figure 6 : the occ and revenue in six districts



**Finding:** The occupancy rate in various classes results in different revenue, the revenue is related to room occupancy rate, but room occupancy rate cannot decide the revenue.

- This figure offers a better understanding of Hotels with different OCC and Revenue in each part of London.
- The OCC of luxury hotel in London west end is around 43% but combined the actual number with supply and demand. The demand is greater than rest of demand in the rest hotel levels.
- Pareto principle (80/20 rule)** was demonstrated to explain customer's purchasing power & choices varied from different classes (Nisonger, 2008).

#### Finding on Events and Accidents

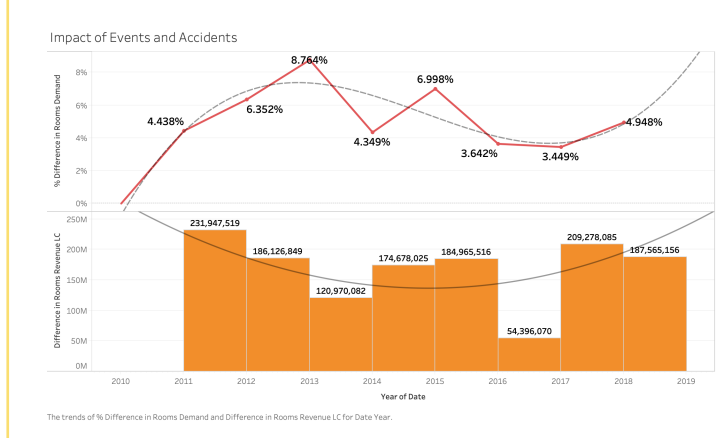


Figure 8: the increments in demand and revenue from 2010 to 2018

- Psychological bias towards simulation:** People prefer to react with negative information than positive ones (Ackert & Deaves, 2010).
- Even though the predication bull that both Demand and Revenue will experience prosperity after 2020, the pandemic may change this result.

**Finding:** Despite a climbing disposition in customer demand could be observed in marketplace from 2010-2013, a reversed phenomenon occurred in the hotel revenue growth.

- Although 2012 London Olympics Games delivered positive messages for the local hospitality, it didn't boost the revenue prosperity until 2015 since safety and road restriction.
- However, due to the currency devaluation from Brexit, a critical plunge occurred in both Room Demand and Revenue in 2016.

### Conclusion & Recommendations

This case study analysed the influence on hotel revenue referred to seasonality, location, revenue management, customer's choice and accidents & events.

- Off-peak promoting strategy towards Asian tourists (VisitBritain, 2013).
- Hotels should investigate their positioning to maximally use the geographic advantages to catch the target audience group.
- A successful pricing strategy should consider its grade first for balancing the customer OCC and revenue inflow.
- Different strategies towards positive/negative events:
  - In prosperity: Flexible expansion schedules and outsourcing services (Espino-Rodríguez & Ramírez-Fierro, 2018)
  - In recession: Low-price strategy and short-term contracts (Evans, 2015).

### Limitation & Future

- The datasets of time samples are insufficient while the observable variables are limited
- In the sustainable perspective, the success of hotel will be ultimately measured by its profitability. However, this research only includes the revenue but ignore the cost on staffing and materials due to the incompleteness of the datasets.
- All conclusions and recommendations in this case could only apply to London. Attempts in other areas need to be further studied and experimented.

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