Marketing Analytics Case Study: Hotel Catalonia Barcelona Plaza

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Abstract: Imagine a scenario where Hotel Catalonia Barcelona Plaza approached a consulting company, seeking to understand its customers and improve its performance. The hotel provided its room booking records from 2015 to 2017 to the consulting company, while the consulting company collected tweets about the hotel, its customer reviews from Booking.com, and the reviews of other hotels in Barcelona. With all the data collected, the consulting company conducted an analysis to help the client hotel understand its customers and performance, and subsequently provided corresponding recommendations based on the findings.

Keywords: Marketing analytics; Luxury marketing; Tourism marketing

1. Executive summary
1.1. Company background information
Hotel Catalonia Barcelona Plaza is ideally located in Plaza España. The hotel provides optimum comfort to its customers with newly renovated magnificent rooms and stunning views. In order to meet the various demands of its customers, it has complete facilities for fitting, business, and leisure purposes. Notably, it has an outdoor swimming pool on its terrace and gymnasium for those who wish to stay in shape. Additionally, the hotel has 11 meeting rooms for business meetings and corporate events on its premise. In terms of food and feast, customers are able to enjoy the impeccable food and services offered by its two restaurants: a café and a gardened marquee for parties and celebrations.

1.2. Assumptions and tasks
This report is based on the hotel's data from 2015 to 2017, aiming to explore its business potential and improvements without the influence of the COVID-19 pandemic. In order to achieve this, a comprehensive analysis is conducted to understand the consumers of this hotel and investigate the profiles of existing target audience (TA). Thereafter, the performance of the hotel is evaluated from different aspects, including strategic positioning compared with main competitors. A review analysis utilizing sentiment data and topic modelling is also discussed in this report. Finally, feasible recommendations are proposed from both, strategic and tactical levels to help Catalonia Barcelona Plaza bolster its established status and develop into new markets.

1.3. Insights
The consumer segments that the client hotel served in the past three years consist of business people,

couples, and getaway families, amongst which business people and couples have made the largest contributions. Taking into account of the communication messages delivered specifically to business people on the official website, the target consumers of the client hotel can be defined as follows: corporate road warriors as the core audience, family getaway-oriented travelers as halo audience 1, and romantic trip-oriented couples as halo audience 2.

The client hotel and its main rivals each have their own niche in the hotel industry, thus creating a delicate equilibrium. However, in order to increase its market share, the client hotel may target a profitable and prospective market segment, namely solo tourists, without significantly disrupting the equilibrium.

Reviews have revealed a slight rise in customer dissatisfaction with the client hotel over the past three years. The customers are mainly dissatisfied with the facilities and environment in the rooms, bathrooms, bar, breakfast, and staff services; however, many are pleased with the client hotel's location and view.

1.4. Recommendations
(1) Develop varying strategies for four different consumer segments.
(2) Improve the quality of offerings and provide personalized services.

2. Consumer understanding

Figure 1 shows that the client hotel often receives reservations from 2 adults, followed by 1 adult, and 3–4 adults or above. In terms of nationality, tourists from France, Germany, and Britain account for the top three reservations out of all nations (**Figure 2**).
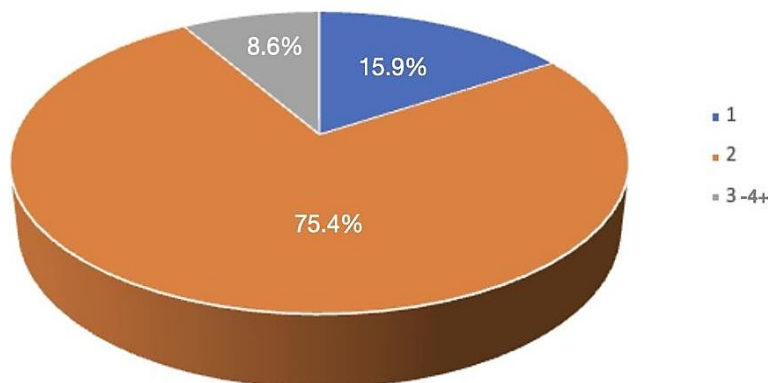

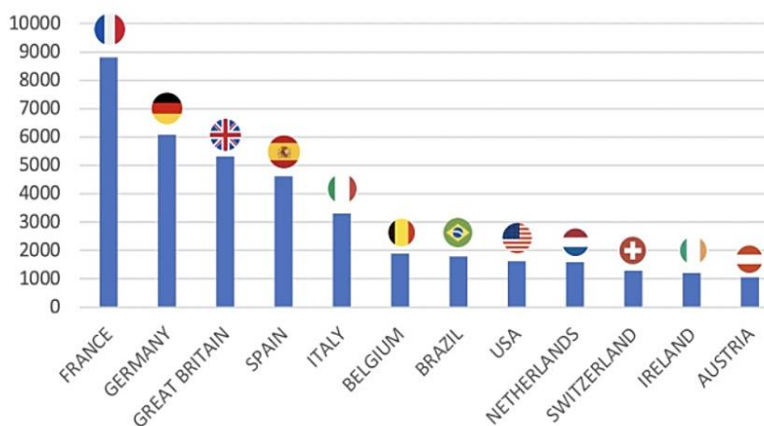**Figure 1.** Proportion of reservations by the number of adults

Figure 2. Number of reservations by country of origin

By classifying the guests by the number of adults who made reservations and checked in, there are three categories as shown in **Figure 3**: category one (1 adult); category two (2 adults), and category three (2–4+ adults). These three categories can be further subdivided based on the number of children and babies each booking relates to. For instance, category one (1 adult) can be divided into "1 adult with 0 children or babies" or "1 adult with 1–2 children." To be precise, they are two groups: "business people" and "one parent with children or babies." In terms of their contributions to the client hotel, the aforementioned "business people" contributed 15.4% of the total reservations from 2015 to 2017, whereas the reservations made by "one parent with children or babies above" were 0.5% of the total.

Figure 3. Customer segmentation

Insights

Therefore, the consumer segments that the client hotel have served in the past three years mainly consist of business people, couples, and getaway families, amongst which business people and couples have made the largest contributions. Taking into account of the communication messages seen on the official website of the hotel, their focus is on business aspects to attract business people, as shown in **Figure 4**. Hence, the existing target audiences of the client hotel can be defined as follows: corporate road warriors or business people as the core audience, followed by family getaway-oriented travelers and romantic trip-oriented couples as the two types of halo audiences (**Figure 5**).

Figure 4. Communication messages on the official website that focus on attracting business people

Figure 5. Existing target audiences of the client hotel

Accordingly, the representative of each target audience can be defined (**Figure 6**). Kévin, from France, represents corporate road warriors, the Schmidt family from Germany represents family getaway-oriented travelers, and Lily and Jack, from Britain, represent romantic trip-oriented couples.

Corporate road warriors

Kévin

Geographic characteristics	French
Psychographic characteristics	• Personality: positive, proactive, adaptive and willing to embrace challenges • Lifestyle and value: dress well and keen on fashion; quality-concerned, less price-sensitive; prefer to "chill" after working hours; focus on self-improvement
Demographic characteristics	• Age: 30 years old • Occupation: international trade • Income: generally well-paid • Education: MBA • Family and household: single

Family getaway-oriented travellers

The Schmidt's

Geographic characteristics	German
Psychographic characteristics of parents	• Personality: family and children come first • Lifestyle and value: keen on comfortable experience and value family togetherness
Demographic characteristics of parents	• Age: 35 years old • Occupation: white collar • Income: generally well-paid • Family and household: 2 children (10 months and 3 years old)

Romantic trip-oriented couples

Lily and Jack

Geographic characteristics	British
Psychographic characteristics	• Personality: caring and sweet to each other • Lifestyle and value: dress well and keen on fashion; not keen on travelling but rather spending time together in the hotel; expecting to celebrate their one-year anniversary
Demographic characteristics	• Age: 25 years old • Occupation: 3-year working experience • Income: not well-off but spend generously on this romantic trip • Education: bachelors • Family and household: a year into this romantic relationship

Figure 6. Profiles of representative target audiences

3. Performance evaluation

In this section, the performance of the client hotel is evaluated, focusing on two key factors: strategic positioning assisted by competitive profile matrix, and its customer reviews investigated by sentiment analysis and topic modelling.

Insights

(1) The client hotel and its primary competitors each have their own niche position in the hotel industry, thus creating a delicate equilibrium. However, in order to grow its market share, the client hotel may develop a profitable and promising market segment, namely solo travelers, without disturbing the equilibrium to a large extent.

(2) There has been a slight increase in customer dissatisfaction with the client hotel, as reflected in reviews over the past three years. The customers are dissatisfied with the facilities and environment in the rooms, bathrooms, and bar, staff services, as well as the breakfast provided; however, many are pleased with the staff, location, and view of the client hotel.

As a renowned destination for visitors with leisure purposes and the world's top city for workcations [1], Barcelona is packed with hotels, in which fierce competitions exist between them. As shown in **Figure 7** [2], among all the cities around the globe, Barcelona ranks 13th in the ranking of "Cities with the Most Hotels." Consequently, in order to distinguish themselves from these hotels, a solid positioning strategy would be crucial to delivering precise messages to the right consumer segments and ultimately providing a return on investment [3].

CITIES WITH THE MOST HOTELS (INCLUDING HOSTELS)

Rank – Total – City, Country – Hotel rooms/B&Bs&Inns/Specialty

- 4169 – Beijing, China – 3505/426/238
- 3127 – Rome, Italy – 1279/1567/281
- 2756 – Shanghai, China – 2485/169/102
- 1984 – Paris, France – 1847/59/78
- 1793 – London, England – 1065/381/347
- 1611 – Guangzhou, China – 1558/22/31
- 1330 – Marrakech, Morocco – 422/806/102
- 1280 – Hangzhou, China – 1155/67/58
- 1227 – Shenzhen, China – 1178/38/11
- 1218 – Chengdu, China – 1074/77/67
- 1139 – Istanbul, Turkey – 706/299/134
- 1101 – Prague, Czech Republic – 667/187/247
- 1081 – Barcelona, Spain – 547/162/372

Figure 7. Ranking of cities with the most hotels

Having gathered information from the client hotel's official website, a complete picture of its positioning is illustrated in **Figure 8**. It claims to be an ideal accommodation for business trips and short breaks, and it emphasizes a high price-facility ratio to target primarily corporate road warriors.

Figure 8. Details of the client hotel (offerings, TA, communication highlights)

Based on the location of the client hotel on Google Maps, the hotel cluster surrounding Catalonia Square, which is the heart and center of Barcelona, could be identified. Eight hotels in this cluster are marked by blue locators in **Figure 9**.
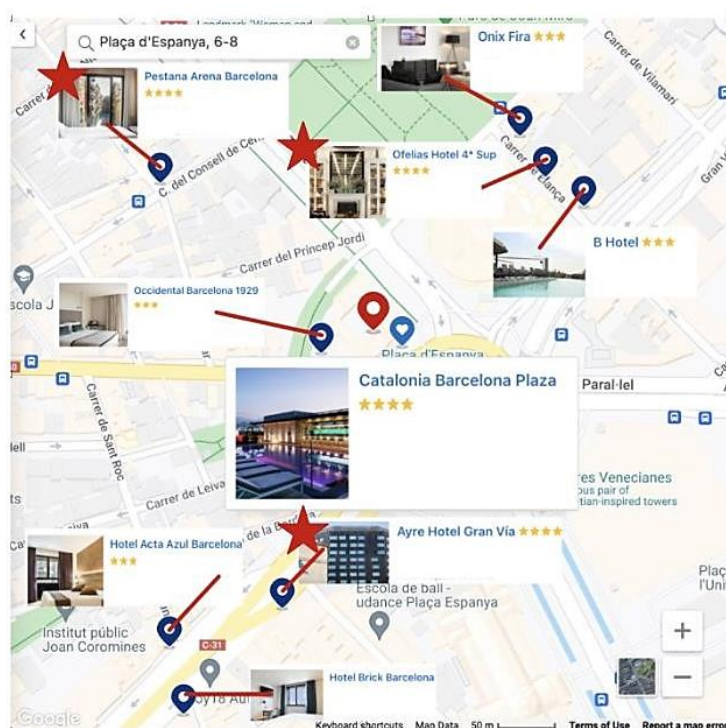

Figure 9. Hotel cluster around Catalonia Square on Google Maps

In order to determine the client hotel's main competitors, the competitive profile matrix is employed. This matrix, as shown in **Figure 10**, is used to further determine the main competitors of the client hotel, thus narrowing down the company's main rivals and comparing them based on the industry's key competitive criteria [4]. This may help the client hotel better understand its external environment and its competitors [5]. The intuition of this matrix is to first define the possible criteria, and then assign each dimension a weighting and rate the hotels according to their actual competitiveness. By filtering and gathering average review ratings and the total number of received reviews from the given data (**Figure 11**), the 8 hotels can be compared to the client hotel in the matrix. Taking Ayre Hotel Gran Via as an example, the hotel may receive 1 in the first dimension ("star rating compared with us") since it has the same star rating as the client hotel. In terms of review rating, it is comparable to the client hotel; hence, it is given 1 as well in the dimension "review rating compared with us." Likewise, the dimensions of "proximity to us" and "popularity compared with us" can be scored. From the results, it is clear that Ayre Hotel Gran Via, Pestana Arena Barcelona, and Ofelias Hotel 4* Sup are the top three key competitors, as indicated by red stars in **Figure 9**.

Criteria	Weight	Ayre Hotel Gran Vía ★★★★	Occidental Barcelona 1929 ★★★	Pestana Arena Barcelona ★★★★	Ofelias Hotel 4* Sup ★★★★	Onix Fira ★★★	B Hotel ★★★	Hotel Acta Azul Barcelona ★★★	Hotel Brick Barcelona
Star Rating Compared with us	0.40	1	0	1	1	0	0	0	0
Review Rating Compared with us	0.25	1	1	1	1	0	1	0	1
Proximity to us	0.20	0	1	0	0	0	0	0	0
Popularity Compared with us	0.15	1	0	0	0	0	0	0	0
Total Score	1.00	0.80	0.45	0.65	0.65	0.00	0.25	0.00	0.25

Figure 10. Competitive profile matrix

hotel name	average review rating	total number of reviews received (popularity)
Ayre Hotel Gran V a	8.8	6883
Occidental Barcelona 1929	9.3	1015
Prestana Arena Barcelona	8.5	1252
Ofelias Hotel 4 Sup	8.6	729
Onix Fira	7.8	1951
B Hotel	8.7	1773
Hotel Acta Azul Barcelona	8.1	2110
Hotel Brick barcelona	9	1348
Catalonia Barcelona Plaza	8.6	2969

Figure 11. Average review rating and total number of reviews received

Similarly, the profiles of the aforementioned main competitors are analyzed below.

(1) Pestana Arena Barcelona: a boutique hotel in the center of Barcelona that caters to travelers who are concern about the price-value ratio.
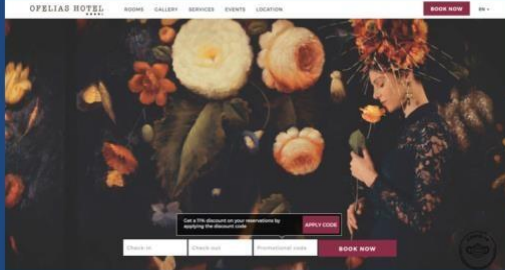
(2) Ofelias Hotel: a hotel that provides a harmonious stay in an environment dominated by beauty and sensuality, serving solo travelers who expect to enjoy individual hours.

(3) Ayre Hotel Gran Via Barcelona: the ideal accommodation for business people, families, and young couples.

A perceptual map based on the positioning strategy of these hotels is depicted, where the four hotels occupy varied places among their competitors. A perceptual map is a diagram used to map out how consumers perceive brands or items; it helps businesses stay in a greater ecosystem by understanding the relative positioning of different competitors [6]. For the client hotel, it is situated in the blue area, delivering messages of high price-value ratio to customers, ranging from business people to families and couples. Hence, it can be said that its performance on strategic positioning is evident and distinct in this competitive hotel industry. However, there is still considerable potential for the client hotel to build a new market segment – solo travelers – as represented by the blue dashed section in **Figure 12**.

Figure 12. Perceptual map of the client hotel and its three main competitors

The second part of performance evaluation employs sentiment analysis and topic modelling. Based on the given sentiment data of the client hotel, the yearly aggregate strength of reviews can be calculated by summing up the aggregate strength of positive and negative reviews per year (**Figure 13**).

year	review type	sum of positive sentiment strength	sum of negative sentiment strength	aggregate strength of posi/nega review
2015	positive review	466	-200	266
	negative review	220	-269	-49
2016	positive review	1359	-602	757
	negative review	747	-877	-130
2017	positive review	482	-226	256
	negative review	254	-288	-34
year		average sentiment strength of the year	aggregate sentiment strength of the year	number of reviews
2015		1.192	217	182
2016		1.142	627	549
2017		1.110	222	200

Figure 13. Sentiment strength analysis

The client hotel's performance can be evaluated by the changes in average sentiment strength over the past three years. **Figure 14** shows a decline in the hotel's average sentiment strength from 2015 to 2017, indicating that the customers' affection for the client hotel as reflected in reviews is waning.
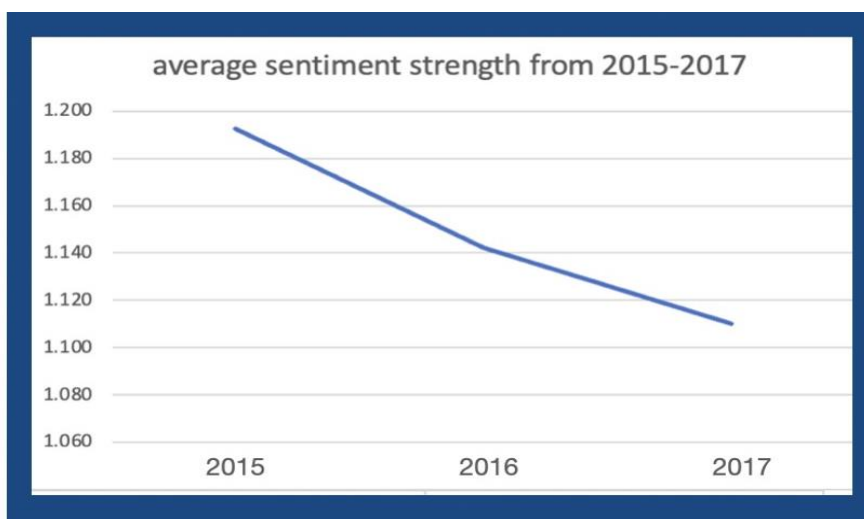
Figure 14. Average sentiment strength from 2015 to 2017

In this case, the client hotel should be more cautious about their offerings and deal with the dissatisfaction of customers as indicated in their reviews. By visualizing both, positive and negative reviews from topic modelling, word clouds are generated to show the prominent topics among customers. In terms of negative reviews, the most discussed topics among customers are room, bathroom, bar, breakfast, staff, reception, *etc.*, whereas in terms of positive reviews, guests tend to praise the staff, location, and view of the client hotel (**Figure 15** and **Figure 16**).

Figure 15. Visualization of positive reviews on the client hotel via topic modelling

Figure 16. Visualization of negative reviews on the client hotel via topic modelling

4. Recommendations

4.1. Develop varying strategies for different segments

Firstly, based on customer understanding, it is clear that the target audiences of the client hotel are mainly business people, followed by couples and families. According to strategic positioning analysis, there are blue oceans for the client hotel to explore, namely solo travelers. This market segment is anticipated to have significant business prospects. According to a survey by Klook in 2019 [7], 76% of the 21,000 people polled globally disclosed that they have traveled alone or are contemplating it. Furthermore, the data obtained from Google Trends have revealed that the number of people traveling alone has grown by 761.15% and many people are continuously seeking for solo travel opportunities. Therefore, the client hotel can consider developing this promising market for business expansion. Accordingly, different strategies for different target audiences are formulated.

On the tactical level, the client hotel can launch an integrated marketing campaign. This is a form of communication strategy that combines multiple channels to assure the consistency of messages delivered to the target audiences [8]. For instance, the message that the client hotel can impart is as follows: "We are

a hotel that welcomes all groups of people, and anyone may make themselves at home here, regardless of who they are." This message can possibly resonate with potential consumers from the four expected target audiences, thus making them feel welcomed. Moreover, as shown in the visualization of positive reviews, the hotel's location and view are among the most highly discussed topics. More specifically, they are the competitive advantages that should be emphasized in communications. This integrated marketing communications (IMC) campaign can highlight that fact that the hotel is a center-located hotel with spectacular views that is ideal for business trips, romantic dates, family holidays, or personal getaways.

After deciding on the planned message, it is necessary to DO and CONFIRM, as asserted by Cai and Hobson [9] in their integrated branding approach. This is a strategy that companies can employ to stand out in competition and develop long-term sustainable competitiveness (**Figure 1**7).
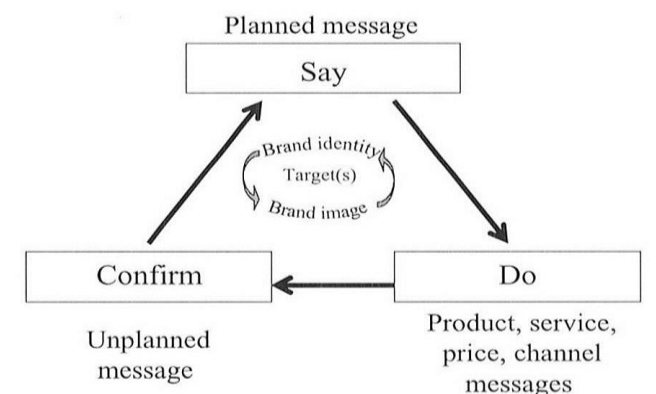
Figure 17. Concept of brand message integrity

Sequentially, in the DO and CONFIRM stages, the client hotel should follow the practical steps in **Figure 18**. Companies are expected to fulfill the promises in their planned message during the DO stage. In the CONFIRM stage, they should be able to manage the unplanned messages, including the word-of-mouth of guests and the reports about the hotel by the media, in order to enhance the planned brand image and ensure message integrity.

Notably, solo travelers are the segment that receives a generally higher level of education, with more than 80% of them having a university education or above (**Figure 19**). They have high regard for self-improvement and their interests in addition to meeting like-minded individuals (**Figure 20**). Therefore, to attract these group of people, special offerings related to self-development and quality social activities might be effective.

Although the aforementioned strategic positioning refreshment and tactical practices may help the client hotel expand into new markets and enlarge its market share, there are potential challenges to contemplate on. For example, if the positioning refreshment exercise is poorly executed, it might result in confusing positioning, and there would be a jumble of conflicting messages and perceptions in the target markets [10]. On the flip side, good practice may yield substantial returns and largely leverage company capabilities. Pink Lemonade, for example, has transitioned from a creative agency to an IMC service provider, which turns out to be a huge success in scaling up, given the growing number of client brands and advertising awards [11].

Our Expected Target Audience

core audience	halo audience 1	halo audience 2	halo audience 3
Corporate road warriors	**Family getaway-oriented travellers**	**Romantic trip-oriented couples**	**High-income solo travellers**
Maintain	Enlarge	Explore	Develop
TAs are business people on international business trip frequently	TAs are families wishing to spend holidays together	TAs are young couples looking for a romantic place for dating	TAs are high-income travellers who are expecting a "ME TIME" trip to run away from the hustle and bustle and get energetic

SAY
We are the perfectly centre-located hotel with spectacular views that is ideal for business trips, romantic datings, family holidays or personal getaways, creating moments away from the hustle and bustle.

DO
- Maintain and refurbish the facilities in 11 meeting rooms regularly
- Business-oriented rooms
- SPA and Bar services for business people to vibe out after work

- Organize all kinds of family activities (handicraft seminars, family boating etc.)
- Family-oriented rooms with tiny beds for children and babies

- Organize activities for couples to stay together (couple boating etc.)
- couples-oriented rooms with romantic decorations
- Special services for dating (flowers reservation,

- Organize activities for solo traveler for self-improvement (interest development, profession-related seminars, parties to meet new people)

- **Public Relation Communication Strategy**: show concerns about affairs in communities of solo travelers and give support (eg. In favour of women solo travelers to show women power); sponsor sports events popular among business people; donate money to poor families; invite famous couples (Justin Bieber and Hailey Bieber) to endorse the hotel

CONFIRM
- Manage online reviews and customers' word-of-mouth: compensate for bad experiences, respond to reviewers as possible, encourage customers to be referrers by offering surprise gifts or discounts
- Manage media & public relations: promote positive image, respond and deal with brand issues as soon as possible
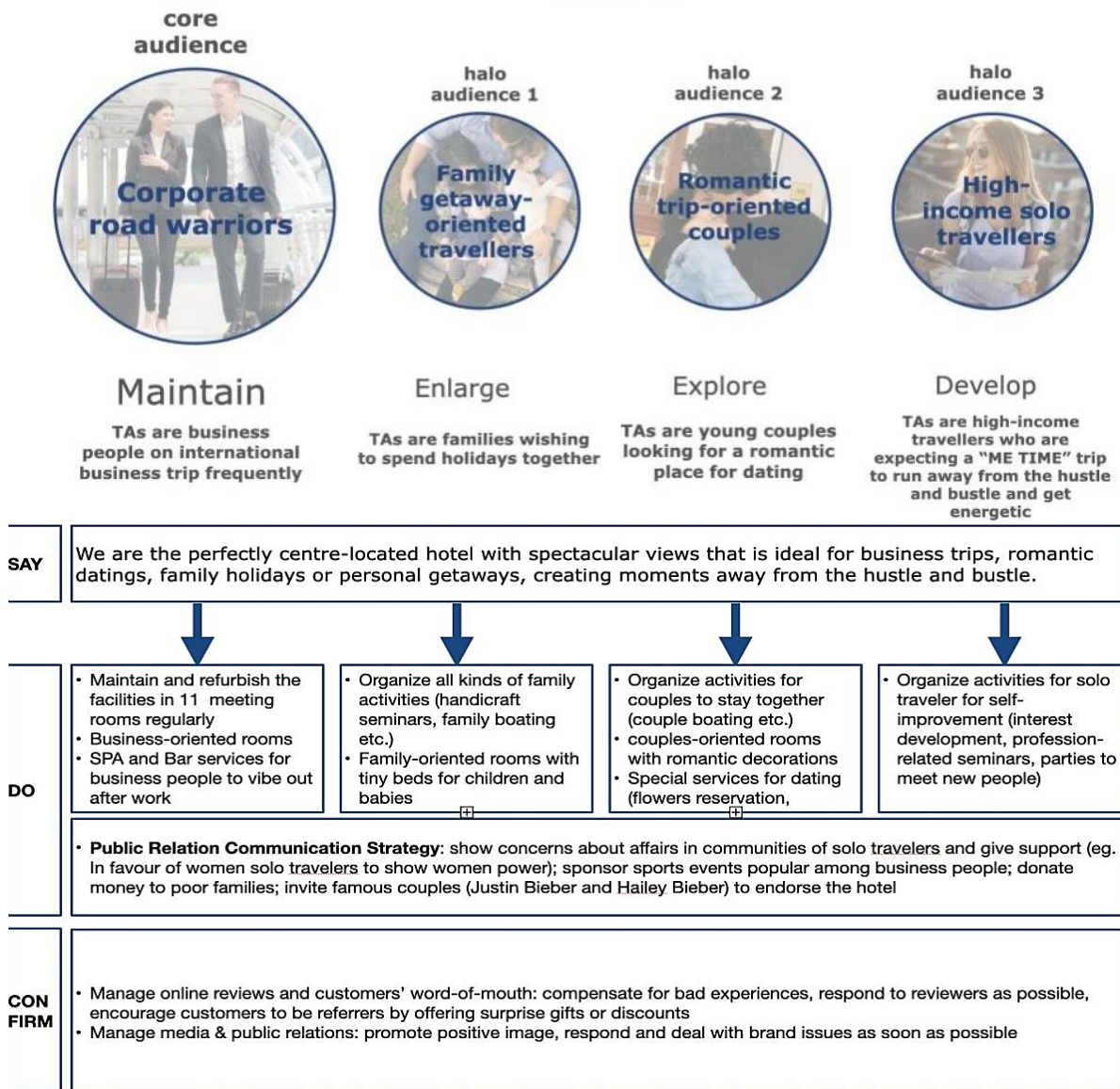
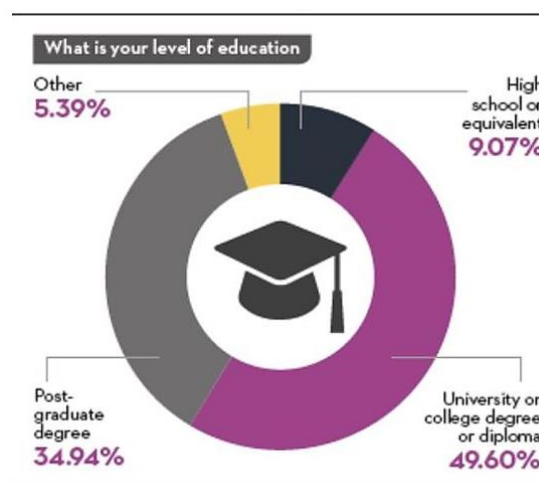**Figure 18.** Strategic direction and practical steps to follow

Figure 19. Education background of solo travelers

Figure 20. Reasons why travelers choose to travel alone

4.2. Improve the quality of offerings and provide personalized services

As can be seen in the word cloud for negative reviews, issues pertaining to rooms, bathrooms, breakfast, bar, staff, and reception are often raised by customers. Having delved into these, the causes of such negative reviews have been found to be associated with tangible offerings (physical environment) and intangible offerings (staff services) (**Figure 21**).

Hence, the client hotel should address the two issues accordingly. For tangible offerings, many reviewers have reported that the environment in the rooms and bathrooms is unpleasant due to the lack of housekeeping. Besides that, the facilities provided are not satisfactory; for example, some mirrors in the bathrooms are broken, and there are instances where taps are missing. Moreover, limited options, "uncozy" environment, and average food quality are all perceived as unfavorable aspects of breakfast. A considerable number of guests have also complained that the bar's menu is overpriced. In a nutshell, the client hotel must improve its environment and refurbish its facilities as a whole as well as make minor modifications to its breakfast and bar offerings.

In terms of intangible services, the quality of the staff requires further improvement. Based on the dimensions for evaluating service quality (**Figure 22**) by Parasuraman *et al*. [12], the services provide by the client hotel's staff lack responsiveness, empathy, reliability, and assurance.
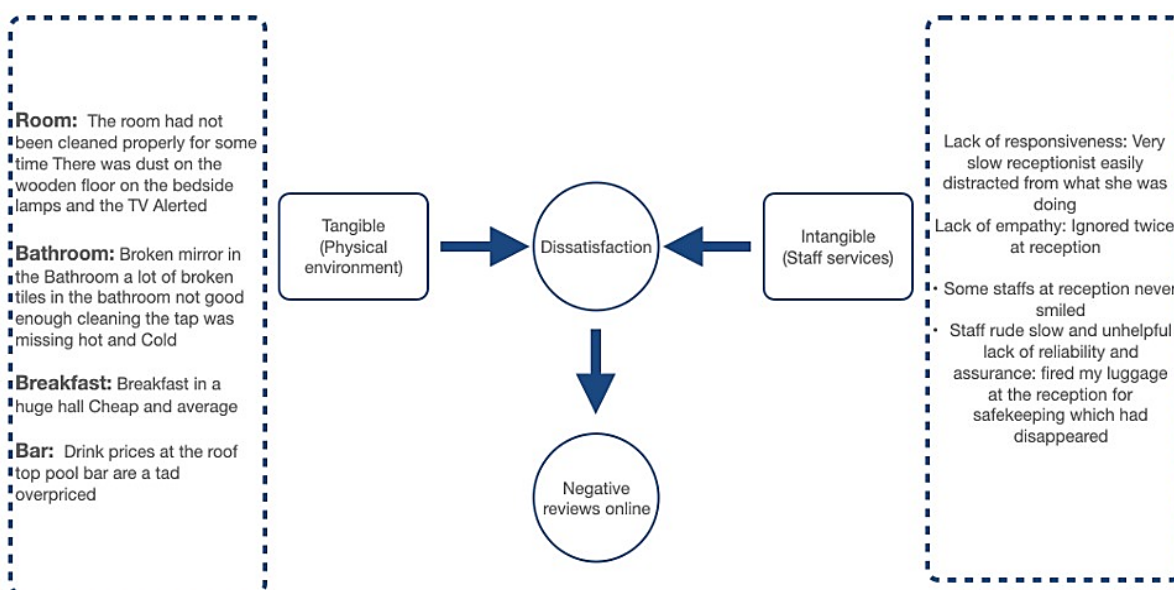

Figure 21. Causes of customer dissatisfaction with the client hotel

Figure 22. Five dimensions to evaluate service quality

Although this is true, there are different opinions, especially in relation to the "services" provided by the staff. As seen in the positive reviews, many reviewers do appreciate the "services" provided by the hotel's staff (**Figure 23**).

Figure 23. Another visualization of positive reviews on the client hotel via topic modelling

This inconsistency is probably due to a disparity in service quality across the staff, and thus the client hotel should consider providing standardized training to every staff in order to enhance its overall performance. Last but not least, different consumers hold varying standards towards hotels, Thus implying that in order to mitigate negative reviews effectively, the client hotel should design personalized offerings. In practice, by engaging with the customers before their check-in to gauge their expectations during their stay would benefit in meeting customer touchpoints and reducing unnecessary disappointments like the one shown in **Figure 24**.

"we asked if we could do breakfast on terrace on Sunday 1 11 15 but was told it
was not enough notice we was disappointed as it was my wife's 50th birthday
so i wanted to surprise her"

Figure 24. A quote from the negative reviews on the client hotel

If the client hotel had known the customer's expectation in advance, this review could have been avoided. **Figure 25** depicts a service blueprint that the hotel can refer to for improvement. It is a useful tool for businesses to coordinate complex services by bridging the gap between different employees and identifying potential problems along the process [13]. In short, the client hotel must not only improve the overall quality of its offerings, but also design personalized services in order to win its guests' devotion.
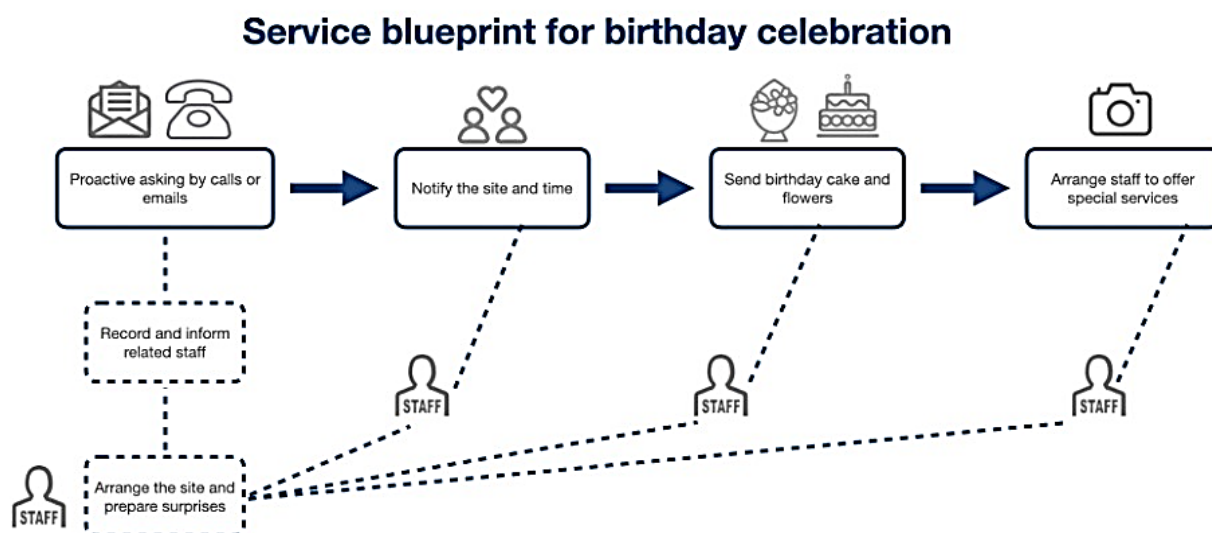

Figure 25. Service blueprint

5. Conclusion

Firstly, the client hotel mainly caters to business people, followed by couples and getaway families. Another niche market – solo travelers – can be further developed by the client hotel to expand its market share. Secondly, the client hotel has encountered a slight rise in customer dissatisfaction. Given the analysis of consumer understanding and performance evaluation, the recommendations of developing varying strategies towards different segments and offering improvements in directions of greater quality and personalization should be taken into consideration but conditional on the budget constraints so as to ensure future success.

Disclosure statement

The author declares no conflict of interest.

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