The changing role of hotel attributes in destination competitiveness throughout a crisis

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Abstract

Purpose – By conducting a longitudinal study, this study aims to investigate how the role of hotel attributes in destination competitiveness changed through the stages of pre-, amid and recovery from the crisis.

Design/methodology/approach – First, the latent Dirichlet allocation method was used to identify hotel attributes from 15,137 online reviews, and then a sentiment analysis was performed to determine tourist satisfaction with the subject attributes. Second, separate asymmetric impact competitor analyses were conducted for the three stages of the crisis, and their results were compared with understand how the role of the hotel attributes changed throughout the crisis.

Findings – The results revealed that the impacts of hotel attributes on tourist satisfaction and destination competitiveness differed significantly at each stage of the crisis.

Research limitations/implications – This research expands the existing literature by offering valuable insights by elucidating the changing characteristics of hotel attributes at each crisis stage. The results extend the body of knowledge in destination management by providing evidence on the validity of asymmetric impact competitor analysis.

Originality/value – To fully understand the impact of a crisis (e.g. COVID-19) on destination competitiveness with a focus on the hotel sector, this research conducted a longitudinal study that covers three stages of the crisis (i.e. pre-, amid and post-crisis). Moreover, unlike previous studies, this research considers the asymmetric relationships between service attributes and overall tourist satisfaction, as well as competitors’ information.

Keywords Destination competitiveness, Hotel attributes, COVID-19, Asymmetric impact competitor analysis, Latent Dirichlet allocation

Paper type Research paper

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Introduction
The accommodation sector and the service quality provided by hotels are vital in shaping destination competitiveness. Thus, hotels have been studied as one of the core components of destination competitiveness, along with other factors such as cultural and natural attractiveness (e.g. Bahar and Kozak, 2007). In these studies, where destination competitiveness was evaluated from the supply side, researchers mostly preferred surveys as the research method by using pre-determined items that may not fully capture the opinions or evaluations of the tourists. To the best of the authors’ knowledge, no study only focused on the quality of hotel attributes in determining destination competitiveness from tourists’ perspectives.

In recent years, some researchers have started to benefit from big data by analyzing online customer reviews to assess the satisfaction and service quality perceptions of the customers (Baek et al., 2020), because the big data approach provides objective and immense customer evaluations without sampling bias (Liu et al., 2017). Some researchers (e.g. Perles-Ribes et al., 2019) preferred to obtain big data from social media to assess destination competitiveness. The common characteristic of these studies is that they evaluate only the subject’s destination data. However, to be successful in the competition, a destination must outperform its competitors by better satisfying the visitors’ needs and desires. Thus, it is not enough to merely measure the focal destination’s performance because it should also be compared with major rivals’ performances.

Various types of crises dramatically affect destination competitiveness leading to a decrease in tourist arrivals. During crises, competitors’ pressure, which is considered as an external risk, may worsen the situation because of the changes in market position. Thus, it is necessary to adapt strategies to changing situations to maintain a competitive advantage. In the tourism literature, few studies have addressed the effect of crises on destination competitiveness (Perles-Ribes et al., 2016). Furthermore, previous studies mostly focused on a specific crisis period (i.e. during or after). To comprehensively understand the effect of crises, longitudinal research that covers key stages of crises (i.e. pre-, amid and post-crisis) is necessary (Wut et al., 2021).

Drawing on the aforementioned research gaps, this study aims to understand the role of hotels in destination competitiveness and to evaluate how it is affected by crises. More specifically, by integrating latent Dirichlet allocation (LDA) and asymmetric impact competitor analysis (AICA) techniques, this study aims to identify how COVID-19 has affected the hotel sector competition between two holiday destinations (Muğla in Türkiye and Balearic Islands in Spain). For this purpose, a longitudinal research approach covering the before, amid and recovery stages of COVID-19 was pursued. In the first phase, the main hotel service attributes were identified with the LDA method by using online tourist reviews belonging to the main market for both destinations (i.e. British tourists). Sentiment analysis was then performed to calculate the sentiment scores of hotel attributes. In the second phase, AICA, which considers both the asymmetric relationships between service attributes and overall customer satisfaction as well as competitor information, was performed for each stage of COVID-19. By constructing individual AICA matrices, we were able to compare the competitiveness of Muğla against its rival Balearic Islands by hotel attributes in the corresponding periods.

This research contributes to the tourism and hospitality literature in at least three ways. First, the current research deepens the knowledge related to the role of hotels’ service quality in destination competitiveness. Second, this study contributes to the existing literature by applying AICA to detecting destination competitiveness. Third, the study broadens both the literature on destination competitiveness and crisis management (especially COVID-19) by using a holistic framework that covers the three periods of the crisis.
Role of hotels in destination competitiveness

Scholarly attempts at identifying determinants of destination competitiveness date back to the 1990s. In general, destination competitiveness is theorized to be determined by external and internal factors, some of which can be measured by objective indicators (e.g. market share), but some are more subjective (e.g. quality of services). In one of the subjective measurements of destination competitiveness studies, Caber et al. (2012) categorized destination competitiveness factors under three groups: core resources and attractions (e.g. high-quality accommodation, climate), supporting factors and resources (e.g. accessibility, shopping) and supporting and amplifying determinants (e.g. safety, value) in a holiday destination. In a recent study, Ferreira and Perks (2020) proposed a three-dimensional destination competitiveness model, including core, facilitating and supporting indicators. Core indicators constitute safety and security, accessibility, infrastructure, accommodation standards and food standards. Facilitating indicators include the quality of the visitor experience, climatic and environmental conditions, cultural heritage and creative tourism resources. Lastly, supporting indicators are categorized as political, economic, social and technological factors.

It is noteworthy that the accommodation sector and hotels, being elements of the destinations’ superstructure and one of the main tourism service suppliers, were categorized as an important factor in destination competitiveness. Hotels are shown to significantly contribute to tourist satisfaction and are vital components of the tourist experience (Nunes et al., 2018). Tourist satisfaction with hotel services is also shown to influence a destination’s competitiveness against its competitors, particularly in the same types of tourism such as holiday tourism. The results of the studies indicate that the more the accommodation enterprises develop and become competitive in a destination, the more competitive the destination becomes (Magombo et al., 2017). Based on the destination competitiveness literature, this study adopted Caber et al’s (2012) and Ferreira and Perks’s (2020) perspectives that hotels and their quality standards are amongst the “core resources and attractions” of a destination.

Studies on tourist satisfaction with accommodation facilities in holiday destinations are not scarce (e.g. Alegre and Garau, 2011). However, little has been done on comparing the holiday destinations’ competitiveness (e.g. Mendaña and Apritado, 2021). More importantly, there is a research gap regarding the comparative analysis of holiday destinations’ competitiveness from tourists’ point of view about hotel attributes.

Varying importance of hotel attributes in crisis times

The importance of hotel attributes has been widely examined in the past two decades. Early years saw the use of survey and interview approaches (Chu and Choi, 2000), whereas recent years witnessed studies using data mining methods (Rhee and Yang, 2015), alongside the surge of online reviews written by hotel customers all over the world. Regardless of the approaches, the important attributes generally concern location, cost, amenities, service quality, safety and ambiance (Callan and Bowman, 2000).

The outbreak of the COVID-19 pandemic has resulted in a vast documentation of research examining the importance of hotel attributes. During the critical period of COVID-19 (first half of 2020), hotel attributes such as breakfast, bed comfort, price, location and surrounding area of the hotel were less important, whereas the importance of experience, cleanliness and security increased for customers in China (Hu et al., 2021). In another study focusing on hotel customers in the USA (Srivastava and Kumar, 2021), attributes related to COVID-19 precautions were at the top of the list. Relatively, attributes including breakfast, property impression and convenient location became less important.
In South Korea, Kim et al. (2021) also revealed that cleanliness and hygiene were the hotel customers’ major concerns during COVID-19, whereas tangible attributes such as amenities and room features were less important. These studies imply that the importance of hotel attributes varies with destinations.

During the COVID-19 period, some studies narrowed their focus and primarily examined precautionary attributes. Davras and Durgun (2022) found that social distancing and the use of masks by staff and other customers were the major determinants of hotel performance. On the other hand, customers complimented hotels that strictly implemented measures against infection. Similarly, Fong et al. (2023) found that tourists’ need for cleanliness was especially salient during the pandemic. These studies imply that hygiene/cleanliness is the top priority of hotel customers during COVID-19. However, these findings were obtained from studies conducted during COVID-19. Hence, it is not clear if hygiene/cleanliness has become more important than in the pre-COVID-19 period. Moreover, while the above studies were conducted using a cross-sectional design, little is known about whether the importance of hotel attributes changes over time. In one of the rare studies, Jang et al. (2018) found that the importance of attributes did not vary over six years, while staff was consistently the most important attribute. This conclusion, however, may not be suitable for the current situation as their study was conducted before the outbreak of COVID-19.

Another fact is that COVID-19 has fundamentally changed consumer behavior (Moon and Chan, 2022). However, behavioral changes in each phase of the crisis have not been fully examined. In one exceptional study, Hu et al. (2021) compared tourists’ evaluation of hotel attributes before COVID-19 and the initial period of COVID-19. Although they made a timely comparison, their study did not cover the recovery period, which hinders the creation of a comprehensive picture. A comparison of the categories of hotel attributes at the stages of pre-, amid and recovery from the crisis would provide useful implications for practitioners, but related knowledge is very limited (Srivastava and Kumar, 2021), leaving a gap to be filled by this study.

Research settings
The research settings that were selected as the holiday destinations for comparison in terms of competitiveness are Muğla in Türkiye and the Balearic Islands in Spain. The destinations were chosen based on the following criteria:

- both are holiday destinations located in the Mediterranean basin;
- tourist demand shows seasonality (Çuhadar, 2014; Turrión-Prats, 2018); and
- categorizations of the accommodation facilities are similar (e.g. hotel categorizations by star rating).

British tourists were selected as the target sample because they represented the main market for both destinations according to 2019 data, reflecting the period before the COVID-19 outbreak (La Moncloa, 2019; TUROB, 2019). This study therefore selected Muğla as the focal destination and the Balearic Islands as the competing destination.

Muğla, Türkiye
Muğla city is located on the Mediterranean coast of Türkiye and contains some of the country’s best-known resorts, such as Marmaris, Bodrum, Dalaman, Köyceğiz and Daća. According to the official tourism data, before COVID-19, in 2019, Muğla hosted 3.26 million international tourists, while 1.137 million were British and 513,056 were Russian. In the first year of COVID-19 (in 2020), Muğla was visited by 695,314 international tourists, and around 310,000
were British. In 2022, which represents the recovery period, international tourist arrivals increased to 2.98 million, while British tourists represented the main market with 1.28 million, followed by Russian tourists (362,000) (Muğla İl Kültür ve Turizm Müdürlüğü, 2023).

The Balearic Islands, Spain
The Balearic Islands (Illes Balears, in Spanish) are the Spanish islands, namely, Menorca, Ibiza, Formentera, Mallorca and Cabrera. This group of islands is officially promoted under one umbrella (Illes Balears, 2023) given their richness of tourism experience options. In 2019, the number of international tourists was reported to reach 13.68 million, while 3.749 million were British. Tourism statistics show that 1.72 million international tourists visited the Balearic Islands in 2020 because of the COVID-19 pandemic (Statista, 2022). In 2022, which was the recovery period, 16.4 million tourists visited the Balearic Islands, while British tourists represented the second main market (3.36 million) (Redacción, 2023).

Methods
The research framework consists of two stages, as depicted in Figure 1. In the first stage, to identify the main hotel service attributes for the Balearic Islands and Muğla destinations, the hotel consumers’ reviews were downloaded from two major online travel platforms. After text pre-processing, the LDA method was used to identify the hotel attributes. Following this step, sentiment analysis was conducted to calculate sentiment scores for the hotel attributes, which represent attribute satisfaction. In the second stage, to compare the competitiveness of Muğla against its rival Balearic Islands by hotel attributes, AICA was

![Figure 1. Two-stage research framework](source: Created by the authors)
applied for the pre-, amid and recovery from crisis periods. Based on the previous research related to COVID-19's effect on tourism, the pre-crisis period was considered from January to December 2019, while January 2020 to December 2021 was classified as the amid crisis period. January to December 2022 was treated as recovery from the crisis period.

Text pre-processing
A total of 15,137 unique reviews written in the English language by British consumers between January 2019 and December 2022 for 5-star hotels and resorts in the Balearics and Muğla destinations were downloaded from two major online travel platforms using a Chrome web scraper extension. For this procedure, TripAdvisor and Booking.com platforms were chosen, considering the most visited travel websites in the world and the UK (Top Websites Ranking, 2023). All the available 5-star hotels and resorts for Balearics (117 on Booking.com and 95 on TripAdvisor) and Muğla (87 on Booking.com and 91 on TripAdvisor) were sampled. The location information of the reviewers was filtered during the data collection procedure to identify travelers from the UK market.

Each review was automatically assigned a unique identity number and split into sentences using the sentence boundary detection feature of the spaCy library in Python. Following this process, all the individual sentences were cleaned from the punctuation with the tokenization feature of spaCy, lowercased and cleaned from the stop words using the English corpus of the NLTK (Natural Language Toolkit) library in Python. Following this step, part of speech tagging was applied to detect and remove the uninformative words and sentences by keeping only the words tagged as noun, adjective, verb and adverb. Finally, each word was transformed into its root form using the spaCy lemmatizer (e.g. “cleaned” into “clean,” “was” into “be”). After the elimination of uninformative reviews, 7,784 reviews for Balearics and 7,168 reviews for Muğla were retained.

Topic modeling using latent Dirichlet allocation
This study adopted the LDA method to discover the important service-related attributes hidden in the online hotel reviews of the two subject destinations. In the first phase, the topic models generated using traditional LDA were utilized to determine the number of topics and extract seed words for the second phase (Das et al., 2021). In the second phase, a guided LDA method was used to generate the final topic model and prepare the data set.

The LDA method requires users to predetermine the number of topics. Hence, using the Genism library in Python, the traditional LDA was performed for various topics ranging from 6 to 100, considering the previous literature on hotel attributes (e.g. Dolnicar and Otter, 2003). For creating the dictionary and corpus, the bigrams with a minimum count of 10 were generated using Gensim and used along with the unigrams (e.g. nice, room, comfy_bed). Additionally, the words appearing less than 20 times and more than 95% frequency were excluded. The results of the LDA method include the probability scores for each sentence, indicating the dominant topic, and the most frequent words that appeared in each topic. Thus, the generated topic models with greater coherence scores were assessed based on their contextual meanings by three tourism academicians to determine the number of topics and the representative seed words to be used for the guided LDA method (see Table 1). For the guided LDA method, a small number of user-defined seed words for guiding the 12-topic model were assigned to the eta parameter of the Idamulticore feature of Gensim. The guided LDA was performed by setting the number of topics to 13, as the 13th topic collected the unrelated sentences to be deleted.
Sentiment analysis

Sentiment analysis has been extensively used by tourism scholars to uncover consumers’ genuine feelings and satisfaction with services hidden in the vast amount of unstructured online data (Wei and Kim, 2022). In the current study, by using the VADER (valence-aware dictionary for sentiment reasoning) of the NLTK, a sentence-based approach was adopted for the sentiment analysis. VADER generates compound polarity scores ranging from \(-1\) (negative) to 1 (positive) as an overall measure of the negative, neutral and positive sentiments (Pano and Kashef, 2020). In the current study, the compound scores were converted into a five-point scale (i.e. 1 – Awful, 2 – Bad, 3 – Neutral, 4 – Good, 5 – Perfect, 0 – Missing value) based on Albayrak et al’s (2021) method. For this procedure, using the previously denoted unique identity numbers, each sentence was placed under its dominant topic, and the sentiment scores were calculated. Figure 2 illustrates how the topics and the sentiment scores were obtained to create the final data set. To ensure reliability, 100 randomly picked sentences were manually rated by two tourism academicians. The similarity of the manual ratings of the academicians with VADER was found to be 73%. Additionally, the Fleiss’ kappa statistic (0.51) indicates a moderate inter-rater agreement level (Landis and Koch, 1977).

Asymmetric impact competitor analysis

The AICA is grounded in the three-factor theory of customer satisfaction, which classifies the service attributes as the basic, performance and excitement factors based on their varying impact on overall satisfaction at their high and low performance levels (Mikulić and Prebežac, 2008). The basic factors refer to the attributes that would not lead to satisfaction, but failure to offer these attributes according to customer expectations would result in dissatisfaction. The performance factors are the attributes that can lead to customer satisfaction, though dissatisfaction is also possible. Excitement factors are something beyond the customer’s expectation, so the offering of related attributes would leverage customer satisfaction to the level of delight, whereas the lack of these attributes would not result in dissatisfaction.
Conducting AICA requires two variables (Albayrak, 2019): one is impact asymmetry $IA$, which reflects the asymmetric effect of an attribute on customer satisfaction by comparing its satisfaction-generating potential (SGP) and dissatisfaction-generating potential (DGP). The other is the relative performance (RP) of the focal company against the competitor’s performance. Four steps were performed to calculate the IA values of the attributes (Mikulić and Prebežac, 2008). First, using SPSS 23, penalty reward contrast analysis was conducted by handling overall satisfaction (the overall rating was used as the overall satisfaction of the customer) as the dependent variable and two dummy variables for each attribute as independent variables. While one of the dummy variables was obtained by re-coding the two lowest performance ratings (1 and 2) as 1 and other ratings as 0, the other was created by re-coding the highest performance rating (5) as 1 and other ratings as 0. As a result, for each attribute, penalty and reward values reflecting its impact on overall satisfaction when performing poorly and well, respectively, were obtained.

In the second step, the absolute values of the penalty and reward scores were added to calculate an impact range value for each attribute. Third, DGP and SGP scores for each attribute were obtained by dividing penalty and reward values by their impact range values. In the last step, the absolute value of the DGP was subtracted from the SGP value to obtain the IA value of each attribute.

The RP of each attribute was calculated by dividing the performance of the Muğla destination by that of the Balearic Islands. Thus, by using the IA and RP values as the $x$ and $y$ coordinates, each attribute was positioned in the AICA matrix (Albayrak, 2019). Then, two lines were drawn at $IA = +0.1$ and $IA = -0.1$. Thus, attributes of the lower part (having IA
less than $-0.1$) were categorized as basic factors, whereas attributes of the upper part (having IA greater than $+0.1$) were classified as excitement factors. Attributes of the middle part (having IA between $-0.1$ and $+0.1$) were classified as performance factors. In addition, a midline was drawn at $RP = 1$, where both destinations’ performance is equal (Albayrak, 2019). As a result, six quadrants were obtained, and hence various managerial implications were offered. For example, competitive positioning quadrant captures excitement factors that Muğla destination performs better than Balearic Islands. These attributes indicate the major strength of Muğla destination, and they can be used for market positioning (Albayrak, 2019).

Results

The two-stage research design used in this study resulted in the following outcomes:

1. identification of the main hotel attributes with LDA using big data and calculation of the satisfaction scores of these attributes with sentiment analysis; and
2. determination of the hotel sector competitiveness of Muğla against its rival Balearic Islands during the pre-, amid- and recovery from crisis periods of the COVID-19 pandemic with AICA.

Results of topic models and sentiment scores

Hotel service attributes of the Balearics and Muğla destinations were detected using a 12-topic LDA model. The topics were labeled by three tourism academicians based on the meanings of the words that frequently occurred in each topic (i.e. cleaning, rooms, view, entertainment, pools, food and beverage (F&B), location, beach, value, facilities, reception and staff). The sample of the seed words guiding the topic model and the number of sentences for pre, amid and recovery from the crisis are shown in Table 1. For the Balearics destination, the most frequently mentioned attribute was F&B, followed by staff and rooms for the periods of pre- and recovery from the crisis. During the crisis, staff attribute was mentioned the most in the hotel reviews for the Balearics destination. Similarly, for Muğla destination, the most frequently mentioned attribute was F&B, followed by staff for all the periods. These attributes were followed by entertainment for the periods of pre- and recovery from the crisis and value for amid-crisis.

The VADER sentiment score averages of each attribute for the pre-, amid- and recovery from crisis periods are shown in Tables 2, 3 and 4. According to the results of VADER sentiment analysis, the view attribute received the most positive reviews for both destinations during all three periods, followed by staff. Additionally, for Balearics destination, these two attributes were followed by F&B for the pre-crisis period and location for amid and recovery from the crisis periods. On the other hand, for Muğla destination, the view and staff attributes were followed by entertainment for all three periods.

Considering the effect of COVID-19 on satisfaction with the hotel service attributes, the negative changes were observed in value, facilities and entertainment for the Balearics destination amid-crisis, while the positive changes were observed in cleaning, reception and location. However, during recovery from the crisis period, negative sentiments increased for the reception, cleaning, pools and location attributes. Surprisingly, only the entertainment attribute showed a positive change in recovery from the crisis period compared to the pre-crisis period. Conversely, for Muğla destination during crisis, the negative changes were observed for all attributes except for cleaning. The most dramatic negative changes in consumers’ sentiments were observed for staff and F&B attributes. However, during recovery from the crisis period, the greatest decrease was observed for cleaning, and this

Changing role of hotel attributes
attribute did not perform better compared to the pre-crisis period. Additionally, F&B, staff and entertainment attributes received the greatest positive change during the recovery period, along with facilities, reception, view and value.

Results of asymmetric impact competitor analysis (pre-crisis)
To perform AICA, we calculated the IA and RP values of each attribute by following the steps articulated in the method section. As depicted in Table 2, the results of the penalty-reward contrast analysis verify the asymmetric relationship between hotel attributes and overall customer satisfaction. As reflected in Figure 3, the view attribute is located in the competitive positioning quadrant, which implies it is an excitement factor (IA > 0.1) that may create customer delight. Because its performance is better than that of the Balearic

Table 2.
Descriptive statistics and calculated indices for AICA (pre-crisis)

<table>
<thead>
<tr>
<th>Hotel attributes</th>
<th>Muğla Mean (SD)</th>
<th>Balearics Mean (SD)</th>
<th>Penalty</th>
<th>Reward</th>
<th>IA</th>
<th>RP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning</td>
<td>3.80 (1.18)</td>
<td>3.67 (1.14)</td>
<td>−0.339*</td>
<td>0.077*</td>
<td>−0.630</td>
<td>1.035</td>
</tr>
<tr>
<td>Rooms</td>
<td>3.58 (1.27)</td>
<td>3.54 (1.38)</td>
<td>−0.242*</td>
<td>0.102*</td>
<td>−0.407</td>
<td>1.011</td>
</tr>
<tr>
<td>View</td>
<td>4.64 (0.77)</td>
<td>4.59 (0.81)</td>
<td>−0.090*</td>
<td>0.151*</td>
<td>0.253</td>
<td>1.011</td>
</tr>
<tr>
<td>Entertainment</td>
<td>4.31 (1.03)</td>
<td>3.84 (1.13)</td>
<td>−0.183*</td>
<td>0.161*</td>
<td>−0.064</td>
<td>1.122</td>
</tr>
<tr>
<td>Pools</td>
<td>3.96 (1.09)</td>
<td>3.91 (1.19)</td>
<td>−0.199*</td>
<td>0.079*</td>
<td>−0.336</td>
<td>1.013</td>
</tr>
<tr>
<td>F&amp;B</td>
<td>4.20 (1.09)</td>
<td>4.15 (1.11)</td>
<td>−0.243*</td>
<td>0.127*</td>
<td>−0.314</td>
<td>1.012</td>
</tr>
<tr>
<td>Location</td>
<td>3.94 (1.08)</td>
<td>4.14 (1.04)</td>
<td>−0.121*</td>
<td>0.135*</td>
<td>0.055</td>
<td>0.952</td>
</tr>
<tr>
<td>Beach</td>
<td>3.70 (1.20)</td>
<td>3.38 (1.11)</td>
<td>−0.132*</td>
<td>0.095*</td>
<td>−0.163</td>
<td>1.095</td>
</tr>
<tr>
<td>Value</td>
<td>3.43 (1.37)</td>
<td>3.33 (1.35)</td>
<td>−0.191*</td>
<td>0.005</td>
<td>−0.949</td>
<td>1.030</td>
</tr>
<tr>
<td>Facilities</td>
<td>3.94 (1.12)</td>
<td>3.94 (1.11)</td>
<td>−0.179*</td>
<td>0.119*</td>
<td>−0.201</td>
<td>1.000</td>
</tr>
<tr>
<td>Reception</td>
<td>3.46 (1.31)</td>
<td>3.39 (1.28)</td>
<td>−0.246*</td>
<td>0.068*</td>
<td>−0.567</td>
<td>1.021</td>
</tr>
<tr>
<td>Staff</td>
<td>4.48 (0.94)</td>
<td>4.37 (1.00)</td>
<td>−0.289*</td>
<td>0.123*</td>
<td>−0.403</td>
<td>1.025</td>
</tr>
</tbody>
</table>

Notes: IA = impact asymmetry; RP = relative performance; penalty and reward indexes are standardized regression coefficients; *p < 0.01
Source: Created by the authors
Islands, it is one of the strengths of Muğla destination against its rival. The competitive advantage quadrant captured the entertainment attribute. Because the performance of the Muğla is better than that of the Balearic Islands, it may lead to customer satisfaction. Location, as an attribute located in the competitive disadvantage quadrant, may generate dissatisfaction because its performance was worse than the Balearic Islands. The remaining attributes are the basic factors (IA < −0.1) located in the null advantage quadrant. Although Muğla destination performs better than its competitor, the attributes create a null advantage because they are perceived as the basic requirements by customers.

Results of asymmetric impact competitor analysis (amid crisis)
Following the same steps used for pre-crisis, the AICA matrix was prepared for the amid-crisis period. The derived indices are shown in Table 3, and Figure 4 illustrates the results of AICA. Entertainment is placed in the competitive positioning quadrant. This implies that it is an excitement factor (IA > 0.1) for Muğla destination and outperforms the competitor, namely, the Balearic Islands. However, for the location attribute, which is positioned in the competitive watch area, significant improvements are needed because its performance is lower than that of the Balearic Islands. The competitive disadvantage quadrant captured a single attribute, namely, facilities. In its current performance level (i.e. lower than Balearic Islands), it may create dissatisfaction for customers in Muğla destination.

Five attributes (pools, F&B, reception, rooms and staff) are positioned in the urgent action quadrant. The findings indicate that these attributes are basic factors (IA < −0.1), while Muğla’s performance is lower than that of the Balearic Islands. Therefore, these attributes have top priority for resource allocation. Moreover, although the performance of Muğla destination is higher than the Balearic Islands for cleaning, value and beach attributes, they do not create any advantage for Muğla destination as they are the basic factors (IA < −0.1).

Results of asymmetric impact competitor analysis (recovery from the crisis)
Similar to previous periods, an AICA matrix for the recovery period from the COVID-19 crisis was prepared. Table 4 presents the descriptive statistics and indices. As shown in Figure 5, the competitive positioning quadrant captured view and entertainment attributes.
These are the excitement factors (IA > 0.1) that may lead to tourist delight and constitute the strengths of Muğla destinations. In their current performance level, no extra effort is required for these attributes. Although the location is another excitement factor (IA > 0.1), it placed in the competitive watch quadrant. This implies that location will not lead to delight for visitors of Muğla destination because Muğla’s performance is worse than Balearic.
Islands. Because the facilities attribute is positioned in the competitive advantage quadrant, it may heighten tourist satisfaction for Muğla destination.

Room is the only attribute that is positioned in the urgent action quadrant. Because it is a basic requirement \((IA < -0.1)\) and Muğla's performance is worse than the Balearic Islands, it requires immediate action to improve its performance. The null advantage quadrant captured F&B, staff, pools, beach, cleaning, reception and value attributes. Because their performance is higher than that of the Balearic Islands, no action is needed by Muğla destination.

**Changes in the role of hotel attributes in destination competitiveness**

Changes in attributes' importance can be evaluated from two perspectives:

1. changes in the categorization of the attributes; and
2. changes in the competitive position of Muğla against the Balearic Islands.

In terms of categorization of the attributes, facilities, which was a basic factor before COVID-19, was identified as the performance factor during and after crisis periods. Entertainment and location attributes were performance factors before COVID-19, while they were classified as excitement factors. Inspection of the changes in the competitive position of Muğla against the Balearic Islands revealed that only three attributes remained unchanged in their positions. They are cleaning, beach and value, which do not create any advantage for Muğla destination during the investigated periods. Although Muğla performs better than its rival, these attributes are basic requirements for tourists.

View attribute kept its position as a competitive positioning factor, although a slight fluctuation happened in its RP amid the crisis. Hence, this attribute is definitely a competitive strength for Muğla destination. Pools, F&B, reception and staff, which were positioned in the null advantage quadrant in pre-crisis, turned into urgent action factors amid the crisis because Muğla’s performance fell behind the Balearic Islands. In the recovery from the crisis period, the RP of Muğla increased, and they turned back into null advantage factors.

**Figure 5.**

AICA matrix (recovery from the crisis)
In contrast, significant changes were observed in the categorization of some attributes in three phases of the crisis. For example, the *rooms* attribute has turned into urgent action in the amid and recovery from crisis periods, while it was a null advantage factor in pre-crisis. Thus, to avoid visitor dissatisfaction, urgent improvement was needed. Interestingly, *facilities* that required an urgent action/null advantage before the crisis has become a competitive disadvantage amid the crisis. This implies that it may lead to visitor dissatisfaction because of the low performance of Muğla destination against its rival. However, it turned into a competitive advantage in the recovery from the crisis stage. In other words, because its RP increased, it may create visitor satisfaction. The *location* had a similar change as it was positioned in the competitive watch in the amid and recovery from crisis periods, although it was at the competitive disadvantage before the crisis. Although it turned from a performance to excitement factor, Muğla destination consistently performed worse than Balearic Islands.

**Discussion and conclusions**

**Conclusions**

This study explores how holiday destinations’ competitiveness in terms of hotel attributes has changed during the phases of pre-, amid- and recovery from the COVID-19 crisis by applying both LDA and AICA. While Muğla was selected as the focal destination, the Balearic Islands was considered as the competitor. LDA was used to determine hotel attributes, and sentiment analysis was performed to obtain tourist satisfaction levels related to these attributes. Then, AICA was performed to create separate matrices for each crisis stage.

In this study, a 12-topic model was generated using the LDA method. Similar hotel service attributes were revealed in the recent hospitality studies conducted with online reviews (e.g. Mehta et al., 2023). According to the findings, tourist satisfaction with many hotel attributes decreased amid the crisis, except for *cleaning* in both destinations. This finding differs from the study of Mehta et al. (2023), who found cleaning to be one of the main reasons for dissatisfaction, along with *staff, service, room, booking* and *pandemic response* during COVID-19. This difference may be caused by the research settings (i.e. USA, UK, India, etc.), and the pandemic period (i.e. from January to September 2020) used by Mehta et al. (2023). Additionally, the better performance of the *cleaning* attribute amid-crisis did not last long, as the satisfaction level of tourists dramatically decreased during the recovery period of the crisis. This may indicate not only an increased attention to the hygiene rules caused by the pandemic in resort destinations but also an increase in the tourists’ expectations for cleaning. Moreover, the findings showed that tourist satisfaction with *entertainment* attributes dramatically decreased amid the crisis. However, it performed even better during the recovery period compared to the pre-crisis period. This may indicate that the lockdown and the social distance rules applied by the resort destinations negatively affected the nightlife and joyful events, and hence the tourists’ emotions during the pandemic. Therefore, tourists may have an increased desire for *entertainment* after the pandemic.

By conducting AICA, which considers the asymmetric relationship between hotel attributes’ performance and overall satisfaction as well as the competitor’s performance (i.e. Balearic Islands), detailed insights about the role of hotel attributes in destination competitiveness were obtained. The results of AICA for each stage of COVID-19 revealed that hotel attributes of *location, value* and *cleaning* stayed as “null advantage” factors in all stages of the crisis for Muğla against its competitor Balearics. This is a unique finding because previous studies performed in other countries indicated that *price, location, precautions* and *cleanliness* attributes gained more importance during crisis (e.g. Hu et al., 2021; Kim et al., 2021). Accordingly, these hotel attributes did not create any advantage or gain any importance in the COVID-19 crisis for Muğla. These attributes could be considered as the “must be” elements of
holiday destinations by tourists, and therefore, they did not generate any competitive advantage for Muğla against the Balearic Islands.

*View* attribute constantly constitutes the strength of Muğla against Balearics, because it is defined as the competitive positioning attribute for all stages of COVID-19. Similarly, *entertainment* represents another strength of Muğla for amid and recovery from crisis periods. Thus, these attributes can be treated as “delight” elements of holiday destinations, and therefore, they generated a competitive advantage for Muğla against Balearics.

**Theoretical implications**

This research aimed to highlight the specific role of hotels and their attributes in the circumstances of a crisis by differing from previous studies that have used hotels as one of the components of destination competitiveness (e.g. Ferreira and Perks, 2020). Because existing research has revealed that big data is useful for obtaining data-driven strategies and knowledge-based managerial perspectives (Horng et al., 2022), a big data analysis approach is adopted in the current study. This made capturing hotel customer reviews directly from online travel platforms possible, unlike other studies that mostly used pre-defined scales to measure customer satisfaction (e.g. Callan and Bowman, 2000).

Besides identifying hotel attributes using big data and the performance variations of these attributes under a crisis environment, this study also investigated the holiday destinations’ relative competitiveness at each stage of the crisis. Although many studies attempted to show the impact of COVID-19 on countries’ hotel sector performance, such as China (Hao et al., 2020) and the USA (Rivera et al., 2021; Srivastava and Kumar, 2021), little is known about how the competitiveness capability of holiday destinations has been affected by this crisis. Therefore, the current study contributes to relevant literature as it compares the performance of hotel sectors in two competing holiday destinations in each COVID-19 period. Although plenty of research efforts have been devoted to the effect of COVID-19, they have mostly focused on a single crisis period (e.g. amid COVID-19), which limits the understanding of the evolution of its effect across different critical stages. Hence, using a longitudinal design that covers three crisis stages makes this study unique to gain in-depth understanding related to the effect of COVID-19 on the hotel sector.

Another originality of this study arises from the examination of the asymmetric influence of hotel attributes’ performance on tourist satisfaction. Although previous research has used this approach to classify hotel attributes as the basic, performance and excitement factors (Albayrak and Caber, 2015), it is not clear whether the implications may be applicable to the current situation as COVID-19 may have restructured this categorization. Therefore, this study expands the literature by clarifying the characteristics of hotel attributes in COVID-19 and showing how they change at each crisis stage.

This study applies the AICA framework to assess destination competitiveness by considering both the asymmetric approach and the competitor’s information. Thus, unlike previous studies that only evaluated the subject destination’s performance (e.g. Perles-Ribes et al., 2019), the current research considers the competitor’s performance. Moreover, because AICA was recently offered by Albayrak (2019), it is imperative to assess its robustness in different contexts and situations. Thus, the present study extends the body of knowledge by providing evidence on the validity of AICA in the destination management context.

**Practical implications**

The results showed that hotel attributes of *rooms, pools, F&B, reception* and *staff* gave alarming signals amid COVID-19 because they turned into urgent action-needed factors. After the crisis, while urgent action was still needed for *rooms* attribute, others became null advantage factors as they were before the crisis. Although these attributes have been null advantage factors beforehand,
sector authorities should attempt to increase their service performance or attractiveness if they aim to gain a competitive advantage. For instance, for the rooms attribute, the negative reviews were mostly about outdated furniture and maintenance-related problems (e.g. the need for repair). Additionally, for the pools attribute, the most frequently mentioned problems were the coolness of the pool water, disturbingly loud music and the difficulties in finding available sunbeds. Also, the F&B attribute was mentioned negatively because of the increased expectations regarding the all-inclusive concept (e.g. poor variety and quality). Hence, hotel managers may consider allocating more budget to upgrade the rooms and furniture; paying special attention to the guests’ preferences for the music genres around the pools; starting a new system for sunbed reservations; offering food theme nights specialized for British tourists; and opening new snack outlets for lunch.

On the other hand, many of these hotel attributes are front-line service-based, so the role of the human factor and employee involvement should be considered in service improvement initiatives and the success of corporate strategies. For instance, the negative reviews for the staff and reception attributes were mostly about inappropriate behaviors and miscommunications. The issues related to these attributes were mainly about the long waiting times upon provision of services (e.g. staff looking tired and depressed and no interaction with the guests). Some studies on the challenges faced by the hotel sector in COVID-19 (e.g. Yogendran and Eranda, 2020) revealed that there was a “lack of motivation” for hotel staff and managers, suggesting that psychological and professional support for staff in times of crisis is important to prevent tourist dissatisfaction.

In the recovery from the crisis period, the main competitiveness-generating hotel attributes are view and entertainment for Muğla because these are competitive positioning factors. Both nice scenic views and entertainment activities are important for the satisfaction of tourists visiting holiday destinations. Although the beauty of the view cannot be easily changed in a destination, hotels may organize more authentic or interesting entertainment activities so that tourist satisfaction can be increased. However, hotel managers’ service improvement and crisis recovery efforts should be analyzed considering both the positive aspects of crises, e.g. opportunity cost or financial resilience and the negative aspects, e.g. the need for immediate resources and dynamic adaptability to constant change and stimuli (Rivera et al., 2021).

Limitations and future research
This study has a couple of unavoidable limitations. For instance, only online reviews written by British tourists for 5-star hotels and resorts were considered. In addition, because of COVID-19, the number of online reviews amid the crisis was relatively lower than other periods. In this study, the guided LDA method was used by excluding infrequent words that occurred less than 20 times. This approach may fall short of detecting the latent attributes and thus impact the number and structure of the extracted topics. Future research can increase in scale by expanding to hotels and resorts of a lower class. This approach may be able to detect additional latent attributes. Additionally, consumer segments (e.g. business travelers, family groups) were not considered in this study. Moreover, Muğla and Balearic Islands destinations were purposely selected by the researchers for being able to make a comparison between two holiday destinations featuring similar characteristics. Hence, the findings of this study cannot be generalized to all holiday destinations and are worthwhile for verification using data concerning other destinations.

References


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