Visual photography's influences on hotel selection: an analysis using e-booking as a comparative platform

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Abstract: In the digital era, the reservation and purchase of tourist services online have increased, with factors such as images playing a crucial role in consumers' decision-making when choosing a hotel on comparison sites like Booking.com. The aim of this study was to analyse the importance of appropriately using photographs, specifically of hotels, according to the tourist destination to be visited. This study employs a quasi-experimental design with four groups to investigate the impact of specific images on hotel selection according to the tourist destination. Conducted in a Gesell chamber using eye-tracking technology, two experimental and two control groups were formed with 11 individuals each, randomly assigned. The results show that image characteristics significantly influence reservation decisions. Specifically, in groups where images aligned with a beach, urban, or rural destination were presented, participants consistently chose the hotel that displayed related images. Additionally, it was found that the first image located on the right side of the screen received more visual attention. These findings underscore the importance of using appropriate images to influence customer choices and enhance online marketing of tourist destinations and their hotels.

Keywords: electronic purchase; tourism; post-pandemic; tourist destination image; emotions; decisions; e-booking.

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1   Introduction

The purchase of services through electronic means has become extremely popular, and the tourism sector is no exception. Despite the significant decline in global tourism caused by the COVID-19 pandemic, currently, in the post-pandemic phase, the desire to engage in tourist travel has experienced an exponential resurgence (Rojas-Berrio et al., 2023).

During the pandemic, restrictions and health concerns led to a significant decrease in tourist travel (Rojas-Berrio et al., 2023; Sánchez-Torres et al., 2023). However, as control measures have been implemented and the situation has improved, people have regained their interest and desire to explore new destinations and have tourist experiences (Ahmad et al., 2022; Villacé-Molinero et al., 2021). Moreover, the need to escape routine, reconnect with family and friends, or simply enjoy moments of leisure and disconnection has driven people to consider tourism as an option to fulfil these needs. Technological advancements and the popularity of online purchasing have greatly contributed to this increase in tourism demand (Ho et al., 2022; Sánchez-Torres et al., 2021). The ease of accessing information about destinations, booking accommodations, and planning itineraries from the comfort of home with a digital device has proven to be attractive for travellers (Chan et al., 2017).

Promotion strategies and the smart use of attractive images and content in digital media have had a significant impact on increasing tourists' decision to travel (Ho et al., 2022; Liu and Zhang, 2014; Yoo and Kim, 2014; Zeng et al., 2020). Currently, travellers are more demanding in their tourism needs and demands, which has led tourist destination providers to effectively manage digital marketing to influence destination choices and improve their position in the market (Chan et al., 2017; Ho et al., 2022).

The importance of the destination image has acquired even greater value, especially due to the relevance that safety and health protocols have gained in the perception of tourists towards a place (Cuesta-Valiño et al., 2023). In this regard, images play a crucial role as value generators, as they directly influence the perception of the quality of the tourist products and services being offered (Amherst et al., 2016; Gillet et al., 2016; Lim and Jang, 2022). Numerous studies have shown that the quality of images of a product or service directly influences the consumer's purchase intention (Liu and Zhang, 2014). This is because images have the power to evoke emotions in consumers, which, in turn, can impact their memory and retention of information related to the tourist destination in question (He, 2022; Kim et al., 2021).

In summary, images play a fundamental role in the process of electronic purchasing of tourism services, as they have a significant influence on consumers' perception and decision-making (Ho et al., 2022). For this reason, tourist destinations must pay special attention to the management of their image, in which tourist safety and trust are fundamental aspects for hotel reservations (Espigares-Jurado et al., 2020). Similarly, some authors discuss the impact of aesthetic elements on hotel bookings (Baek and Michael Ok, 2017). It is therefore necessary to analyse the impact of photographs on online hotel reservations (An and Ozturk, 2022).

The aim of this study was to analyse the importance of appropriately using photographs, specifically of hotels, according to the tourist destination to be visited. For this purpose, the following hypothesis was proposed:

> "The most representative images of the characteristics of a destination associated with a hotel are the most effective for hotel selection during the reservation process on a comparison website."

This paper begins with a thorough theoretical review of previous studies related to the subject matter. This review allows for situating this study in the appropriate context, identifying relevant previous research, and establishing the theoretical foundations that support this analysis. Next, the methodology used in this investigation, which is based on a quasi-experimental design, is explained. In this regard, the steps followed for the construction and execution of the experiment are described in detail, including the selection and distribution of the groups, manipulation of variables, and data collection. Subsequently, the results obtained through the quasi-experiment are outlined. This section includes the findings and data collected during this evaluation, which are analysed and discussed in relation to the research objectives and the theoretical review conducted previously. Finally, the conclusions derived from the results obtained are presented. In this part of the work, the most relevant findings are summarised and their implications for the field are discussed. Additionally, recommendations for future research or suggestions to improve the practical application of the results are included.

2   Theoretical framework

2.1   Booking hotels on comparison websites

When using online booking channels, the process of selecting and purchasing a tourist reservation is complex and influenced by the evaluation of different options (Liu and Zhang, 2014). On the other hand, Sparks and Browning (2011) concluded that tourists take into account various visual elements they find on booking pages to decide which hotel to choose. However, there are still no definitive conclusions about which specific factors influence the choice of hotel during visits to comparison websites like Booking.com (Liu and Zhang, 2014).

Recent studies demonstrate that elements related to images play a significant role due to the impact they can have on tourists (Gillet et al., 2016; Ho et al., 2022; Lim and Jang, 2022), not only from an emotional standpoint, but also from a rational perspective (Baek and Michael Ok, 2017). Regarding this line of research, the demonstrated quality of images plays an important role in influencing hotel booking decisions on the internet, particularly in terms of generating enjoyment and, consequently, reducing stress, leading to quicker choices by the buyer. For instance, in a study conducted by Bufquin et al. (2020), it was demonstrated that an offer with high-quality hotel images can be beneficial in increasing the sense of enjoyment in considering a hotel reservation (Lim and Jang, 2022).

Other studies demonstrate that the information conveyed by images of a hotel reduces the level of uncertainty a customer may have regarding the service they will book (Ho et al., 2022). Considering these two factors, the quality and the diversity of information, it is not the quantity of photographs that generates the most impact on bookings. Instead, these photographs should provide high-quality information to achieve a successful reservation (Kim et al., 2021). This makes it more complex for the use of photographs to simply generate the desired effect in choosing a hotel (Cuesta-Valiño et al., 2023). Other

studies have demonstrated that the emotional and enjoyable effects of images are not directly related to the final hotel selection when booking online (He, 2022).

Finally, the latest studies show that the first photo is highly significant in influencing online hotel bookings. Therefore, it is of great importance to choose a photograph that contains all the communicational elements about the benefits of choosing a hotel (Lim and Jang, 2022).

3   Methodology

In this study, a quasi-experiment is proposed through the design of four groups, with the aim of controlling the intervention of changing photographs. It was conducted in a Gesell chamber using an eye-tracking device, as eye-tracking methodology provides direct measures of eye movement in relation to realistic stimuli based on adjustments (Djamasbi, 2014). The groups were organised as follows: two groups were assigned as experimental (RG1, RG3), and the other two as control groups (RG2, RG4). To form these groups, clusters of 11 individuals, including both men and women, were created. It was then randomly decided which groups would be the experimental ones and which would be the control ones.

Table 1   Quasi-experimental design

RG1 (manipulation)	X: Three images of hotels were shown that had notable differences in the photographs. The image of one hotel was highly aligned with the destination (Figures 1, 2 and 3).	2: Participants were asked to indicate their choice based on the tourist destination: beach, urban, and rural ecotourism.
RG2 (control)	-	4: Three tourist images were shown, and participants were asked which one represented the tourist destination the most: beach, urban, or rural ecotourism.
RG3 (manipulation)	X: Three images of hotels were shown which had notable differences in the photographs. The image of one hotel was highly aligned with the destination (Figures 1, 2 and 3).	5: Participants were asked to indicate their choice based on the tourist destination: beach, urban, and rural ecotourism.
RG4 (control)	-	6: Three tourist images were shown, and participants were asked which one represented the tourist destination the most: beach, urban, or rural ecotourism.

Once the groups were established, the dependent variable 'hotel choice' was measured in both selected groups. Subsequently, the treatment was applied, which in this case involved two levels of the independent variable: the presence and absence of photographs related to a specific tourist destination (X). It is important to mention that, although there were four groups in this design, only two levels of the independent variable were applied. This meant that two groups were exposed to photographs related to the tourist destination

(RG1, RG3), while the other two groups were not (RG2, RG4), in order to observe how this intervention affected the measured variable (Table 1).

In summary, this study used a quasi-experimental design with four groups to control the influence of changing photographs. Two of the groups were exposed to the highly aligned with the destination photographs (see Figures 1, 2 and 3), while the other two groups were not, allowing for the analysis of the impact of the presence or absence of images related to the tourist destination on the variable of interest.

Figure 1   Beach hotel 1 (see online version for colours)

Figure 2   Urban hotel 1 (see online version for colours)

4   Data analysis

4.1   Heatmaps

First, the outcomes were analysed using heatmaps, which is an accepted method of evaluating an observer's fixation on an image (Djamasbi, 2014). The results obtained through heatmaps reveal how participants focused their gaze while observing hotel options on the Booking.com comparison page, which was used as an example in this study. The findings show certain trends in participants' gaze fixation, particularly on the central photographs and the text containing the hotel names (see Figures 4–6). However, the colours on the heat maps display more yellows than reds, which is evidence of limited gaze fixation on the images (Djamasbi, 2014).

Figure 3   Rural hotel 1 (see online version for colours)
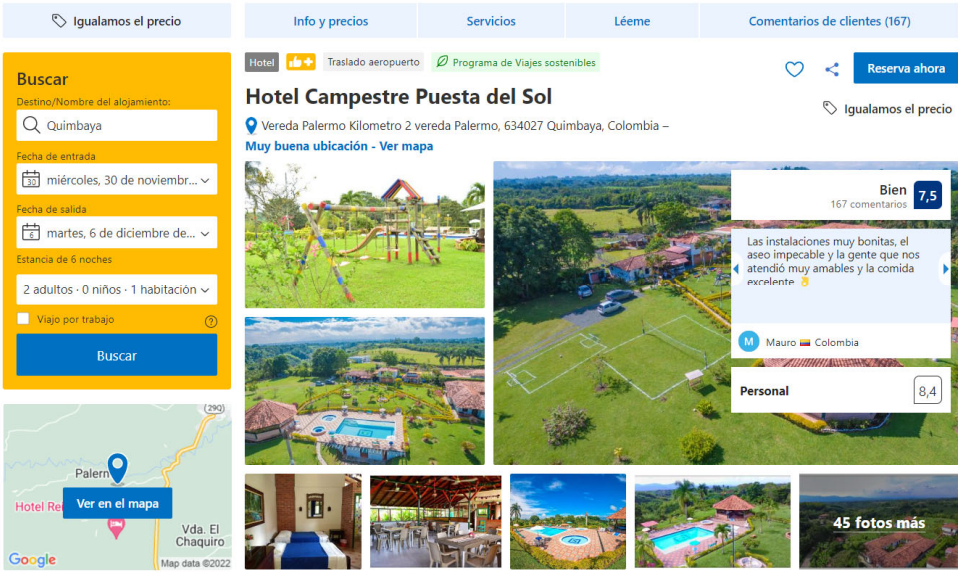
Interestingly, no significant differences were found in the observation pattern based on the type of hotel, indicating that participants exhibited similar visual behaviour regardless of the type of accommodation they were evaluating. In particular, the heatmaps displayed a clear predominance of visual fixations on the first photograph located on the left side of the screen, followed by the larger image situated on the right side. These findings suggest that users utilising search engines and comparison pages to book hotels place great importance on images, especially on the first presented image and those that are larger in size.

These results demonstrate that photographs play a crucial role in users' decision-making when booking hotels through search engines and comparison pages like Booking.com. The arrangement of images, particularly the first one and the largest one, captures users' attention and exerts a significant influence on their accommodation choices. These findings align with other similar studies where images placed higher on

the screen had more influence than those in a lower position screen (Amherst et al., 2016).

4.2 Hotel choice according to photographs

After analysing the hotel options in the four groups, it was observed that, for the two control groups, the hotel options were similar in terms of the characteristics shown in the photographs. In contrast, for the intervention groups, hotel option 1 presented specific characteristics associated with the type of trip proposed, while the other two options showed images less related to the theme.

Figure 4 Beach hotels (see online version for colours)
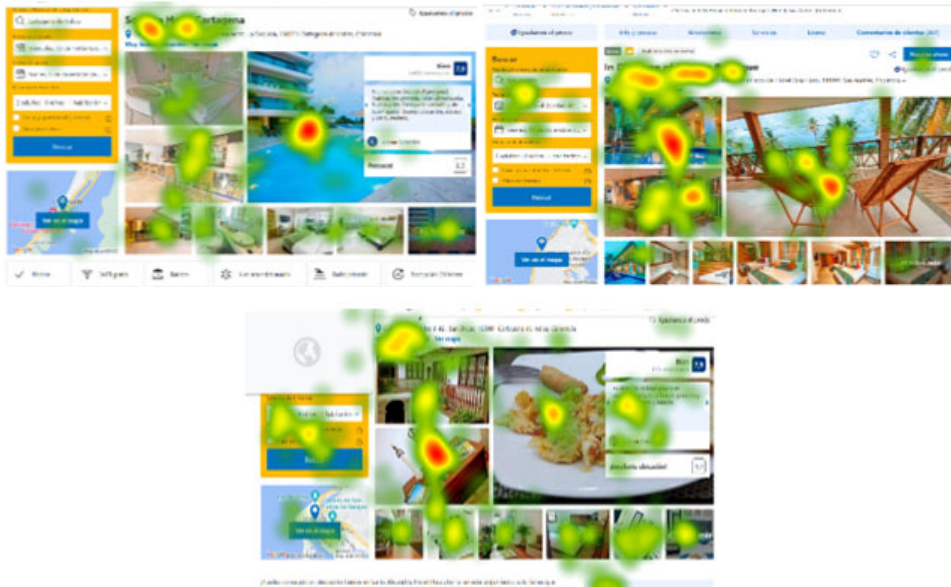
It is important to note that the responses obtained in this experiment were of a categorical nature, meaning that participants made discrete choices, and no analysis of variances or correlations was conducted. Instead, descriptive analyses of frequencies and totals were applied to examine the patterns of choice in each group. These analyses provided an overview of how the participants in each group made their decisions based on the options presented. The goal was to observe if the intervention, i.e., the inclusion of characteristics associated with the type of trip in hotel 1, influenced participants' choice towards that specific option.

In the process of choosing a hotel for a sunny destination, significant differences were observed between the control and intervention groups (as shown in Table 2 and Figure 7). Specifically, in the intervention groups, all participants chose hotel 1, which featured images more related to a beach vacation hotel. These images included typical elements of the coastal landscape, such as the sea, sand, and clear skies, as well as facilities like a swimming pool, a restaurant, rooms, and bathrooms (as shown in Figure 1).

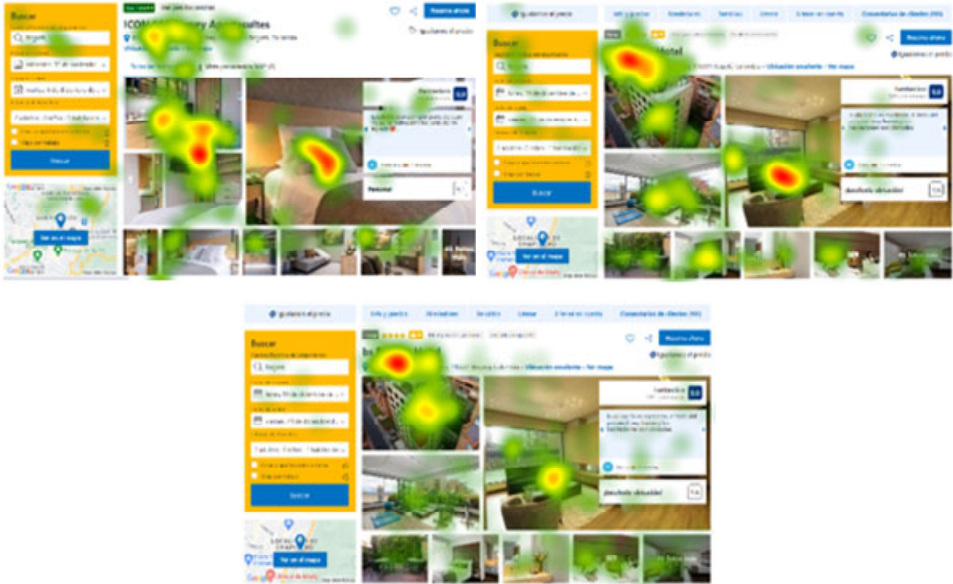**Figure 5**   Urban hotels (see online version for colours)

Figure 6   Rural hotels (see online version for colours)
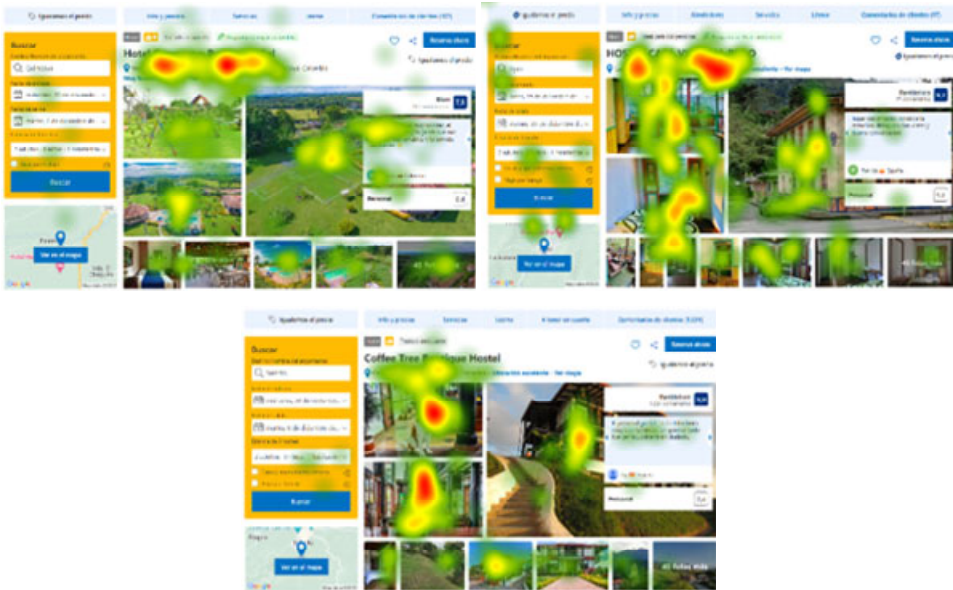
On the other hand, in the control groups, the hotel options did not have such specific characteristics associated with the beach destination. The images of these hotels did not clearly showcase the attractions of a sunny beach destination.

In the process of choosing a hotel for an urban destination, significant differences were observed between the control and intervention groups (as shown in Table 3 and

Figure 8). Specifically, in the intervention groups, all participants chose hotel 1, which featured images more related to a hotel in a city or urban destination. These images showcased details of the furnishings, such as beds, furniture, and bathrooms, as well as the hotel's infrastructure, common areas, dining spaces, and other architectural details (as shown in Figure 2).

Table 2 Frequencies of hotel choice for sunny destination

| | | Sun | | | Total |
		Hotel 1	Hotel 2	Hotel 3	
Group	Experimental 1	12	0	0	12
	Experimental 2	12	0	0	12
	Control 1	2	4	6	12
	Control 2	4	3	5	12
Total		30	7	11	48

Figure 7 Selection of beach hotel destination (see online version for colours)
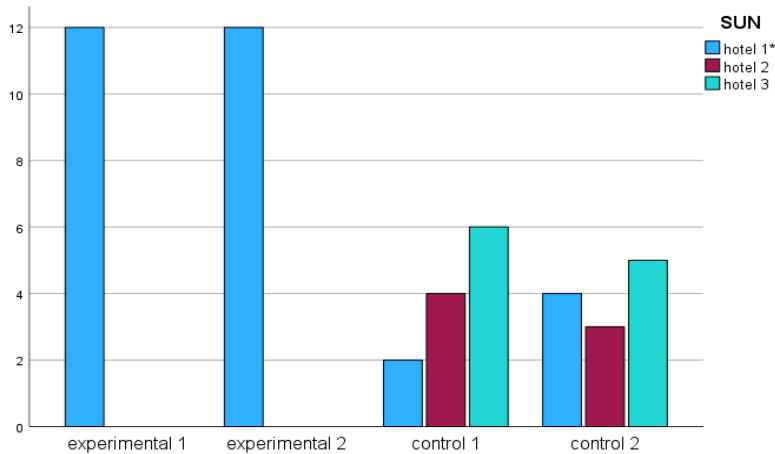
Table 3 Frequencies of hotel choice for urban destination

| | | Urban | | | Total |
		Hotel 1	Hotel 2	Hotel 3	
Group	Experimental 1	12	0	0	12
	Experimental 2	12	0	0	12
	Control 1	2	4	6	12
	Control 2	4	4	4	12
Total		30	8	10	48

On the other hand, in the control groups, the hotel options did not have such specific characteristics associated with the urban destination. The images of these hotels did not clearly reflect the essence of a hotel in an urban environment. These results suggest that the intervention carried out in the groups by presenting hotel 1 with images clearly

related to the type of urban destination influenced the participants' choices. They all leaned towards the option that reflected the most attractive features of a hotel in a city, such as furnishings, infrastructure, and common spaces.

In the process of choosing a hotel for a rural destination, significant differences were also observed between the control groups and the intervention groups (as shown in Table 4 and Figure 9). In the intervention groups, all participants chose hotel 1, which featured images more related to a countryside or rural vacation setting. These images showcased the beauty of the natural surroundings, outdoor activities, and a connection with nature (as shown in Figure 4). Conversely, in the control groups, the hotel options did not have such specific characteristics associated with the rural destination. The images of these hotels did not clearly reflect the experience of a vacation in the countryside or a natural setting.

Figure 8   Selection of urban hotel destination (see online version for colours)
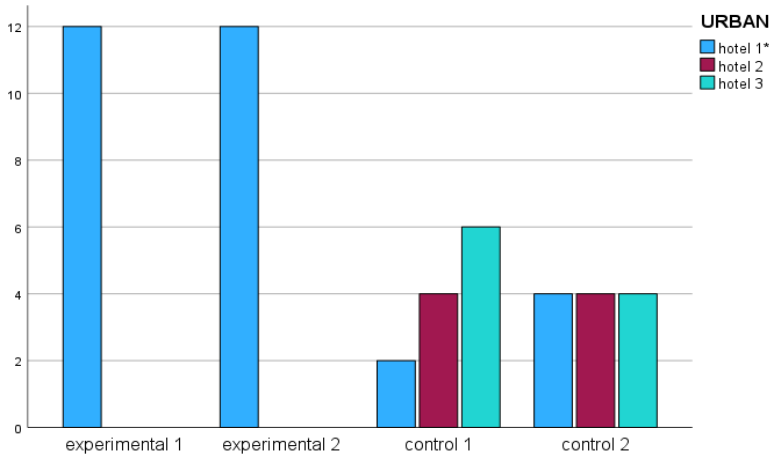
These results suggest that the intervention performed in the groups by presenting hotel 1 with images clearly related to the rural destination type influenced the participants' choices. They all favoured the option that reflected the most attractive features of a hotel in a countryside setting, with opportunities to enjoy nature and outdoor activities.

Table 4   Frequencies of hotel choice for rural destination

| | | *Rural* | | | *Total* |
		Hotel 1	*Hotel 2*	*Hotel 3*	
Group	Experimental 1	12	0	0	12
	Experimental 2	12	0	0	12
	Control 1	6	3	3	12
	Control 2	6	3	3	12
Total		36	6	6	48

In summary, the results for the three types of hotel destinations showed that the presence of more specific and related images to the rural destination in hotel 1 was decisive in all intervention group participants selecting it. Meanwhile, in the control groups, where the

hotel options did not display such distinct characteristics, the choices were more varied. These findings support the idea that visual presentation significantly influences consumers' decisions when choosing a hotel for a specific rural destination.

The findings of this research corroborate the proposed hypothesis: "the most representative images of a destination associated with a hotel are the most effective for hotel selection during the reservation process on a comparison website." The results were obtained for three different types of tourist destinations (sun, urban, and rural), demonstrating that tourists will book hotels that utilise photographs containing elements that are characteristic of both the hotel's facilities and the nearby external surroundings that surround it.

Figure 9 Selection of rural hotel destination (see online version for colours)
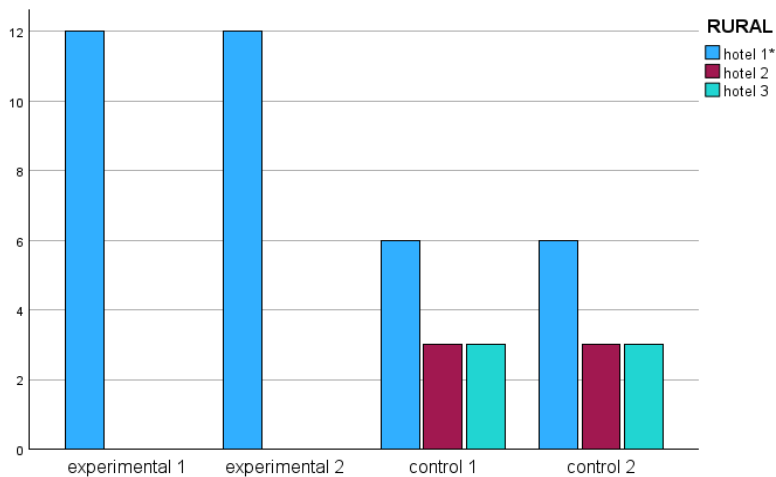
5 Discussion

The findings of this study present two interesting results. First, it was discovered that customers fixate their gaze on the first image located on the right side of the screen. This is surprising, as previous works have shown that the order of photo presentation and their content influence their impact. These findings reinforce previous studies on the importance of photographic production of images that hotels display on the website, particularly concerning aesthetic, luminous, and focusing elements (Cuesta-Valiño et al., 2023).

Second, the results related to the idea that images containing elements associated with the characteristics of a hotel sought by a tourist, depending on the destination, align with the latest research on the impact of images on hotel reservations through internet platforms, in this case, Booking.com. These results were obtained in an exploratory manner and complement previous studies on the subject.

To summarise, this study offers significant insights into the ways in which customers engage with hotel images and the impact these images can have on their booking choices. This is particularly pertinent in the context of online platforms such as Booking.com. The findings underscore the importance of ensuring that the visual representation of a hotel on

comparison websites accurately reflects the specific requirements of tourists, which can vary depending on the destination.

In an era where travellers increasingly rely on online platforms to make their accommodation choices, the role of images becomes paramount. Hoteliers must recognise that potential guests often form their initial impressions based on these visual representations. Therefore, it's essential for hotels to present a compelling and authentic portrayal of their offerings, taking into account the unique preferences and expectations of travellers bound for a specific location.

In essence, this research underscores the pivotal role of images in shaping travellers' booking decisions and highlights the need for hotels to adapt their visual content to match the diverse demands of their target audience. Failure to do so can result in missed opportunities, as customers rely on the visual representation of a hotel to make informed choices, ultimately influencing the success of the hotel on online booking platforms.

6   Conclusions

This study was based on the assumption that "the images that best represent the characteristics of a destination associated with a hotel are the most effective in influencing hotel choice during the reservation process on a web-based comparison page." The results of this study supported this assumption, especially in the context of comparison pages like Booking.com. They showed that tourists tend to choose hotels that present photographs highlighting architectural features, interior design, decoration, and other functional elements, such as furniture and services, that demonstrate the quality levels the tourist seeks in a hotel according to the destination. In other words, images that clearly show what a hotel offers and how it aligns with the tourist's expectations for a specific destination have a significant impact on their reservation decision.

The theoretical contributions of this study in the field of marketing and tourism marketing are significant, as it is one of the first studies to analyse the visual content of hotel photographs on a comparison page such as Booking.com. Two main findings stand out. First, this work confirms what previous research has already suggested about the pattern of image viewing on a webpage when choosing a hotel. In this specific case, new knowledge has been generated by demonstrating that tourists primarily focus on the first image located in the upper right corner of the screen, which holds significant relevance in the customer's visual navigation. On the other hand, it was discovered that the photographic content associated with the type of tourism the customer intends to engage in is crucial in choosing a hotel. This finding supports previous studies (Cuesta-Valiño et al., 2023) that emphasise the importance of photographs as elements that generate emotions, attitudes, and behaviours in tourists. In other words, images that represent specific characteristics of the type of tourist destination the customer is seeking significantly influence their hotel reservation decision.

Practical and managerial contributions have a significant impact on improving marketing and promotion strategies in the tourism industry. These contributions allow for a more effective presentation of destinations and hotels on online platforms, leading to an increased potential to capture the attention of potential customers and boost reservations. According to this study, the marketing actions on comparison and reservation pages taken by hotels should focus on carefully selecting the best photographs of their establishments. The choice of these images should be based on the benefits that hotels can offer to

tourists, highlighting all the details that can be decisive in the customer's choice of their hotel as a destination.

In conclusion, having a strategic and careful approach to image selection and presentation on reservation and comparison platforms can make a significant difference in customer choice and, ultimately, in the success of hotels and tourist destinations.

Finally, in the field of tourism research, it is crucial to continue exploring and analysing the potential for using virtual reality images in hotel reservation processes. For example, virtual reality has experienced significant technological advances in recent years, offering innovative and exciting opportunities for the tourism industry (Zeng et al., 2020).

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