Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Saving the hotel industry: Strategic response to the COVID-19 pandemic, hotel selection analysis, and customer retention

Jinkyung Jenny Kim [a], Heesup Han [b,*,1]

[a] School of Hotel and Tourism Management, Youngsan University, 142, Bansong Beltway, Haeundae-gu, Busan 48015, South Korea
[b] College of Hospitality and Tourism Management, Sejong University, 98 Gunja-Dong, Gwanjin-Gu, Seoul 143–747, South Korea

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ABSTRACT

This study investigates the effect of the COVID-19 pandemic on the hotel selection attributes and customer post-purchase behaviors. Qualitative and quantitative processes comprising an importance-performance analysis are used. This mixed-methods approach successfully (1) explores the hotel selection attributes after the COVID-19 pandemic, (2) uncovers the change of importance of these attributes before and after the outbreak of COVID-19, (3) identifies the importance and the performance level of the hotel selection attributes, and (4) explores the roles of the hotel selection attributes that form the overall image of a hotel and the subsequent intentions to revisit a hotel. This study includes a high degree of value, and this is the first empirical research that explores the guests' hotel choice behaviors before and after the pandemic, which can be helpful for the subsequent guest-behavior studies in the post-pandemic era.

1. Introduction

The coronavirus disease (COVID-19) has resulting in a paramount concern regarding service safety and transforming the service operations into a new mode of practices for increased separability and decreased contact (Berry et al., 2020). Similarly, COVID-19 is a disruptive influence on the hotel industry, which has caused significant changes in regards to the offerings and the operations in order to fulfill a new set of criteria. This means that hotels have been reshaped since the outbreak of COVID-19, which the first confirmed case was detected in December 2019. A number of authorities and world organizations have released guidelines and recommendations for accommodation's establishment (CDC, 2020; WHO, 2020a). For example, the World Health Organization provided operational considerations for COVID-19 management in hotels and suggested protective measures in order to assure a safe and relaxing hotel stay for the customers. Hotel professionals have not only complied with these types measures, but they also initiated diverse ways to make certain that the hotels are safe from coronavirus (CNBC, 2020). Likewise, Marriott International introduced their commitment toward clean and contactless services for travel with confidence during COVID-19 (Marriott, 2020).

The hotel selection attributes refer the determining features of the products/service that lead consumers to choose one hotel over another (Lewis, 1984). The hotel selection attributes have long been a subject of study, since they provide a vital clue to gain market share (Shanahan and Hyman, 2007; Tsai et al., 2011; Yu et al., 2021). The existing studies demonstrated important attributes that individuals seek in regards to their hotel selection differ with various factors, such as hotel categories, market segments, and the consumers' demographic profiles. For instance, Spoerr (2020) investigated the importance of the hotel selection attributes for groups of travelers in Germany. The results determined the differences with the rating of each attribute with respect to the individuals' demographic variables. Wang et al. (2020) identified the differences in the hotel selection attributes of various types of travelers, which include business travelers, couples, and families.

In addition, the hotel selection attributes that consumers perceive as important have historically shifted. More consumers are interested today with participating in sustainability through their hotel choices (Han et al., 2009). Likewise, Njite and Schaffer (2017) revisited the hotel selection attributes, and they compared how consumers perceived the importance of green attributes compared to the tradition choice factors. Furthermore, a new set of hotel selection attributes that encompass technological innovation appeared once hotels embraced the technology mediated products/services and smart technologies (Chiang et al., 2019;

* Corresponding author.
E-mail addresses: jennykim1120@gmail.com, jenny.kim@ysu.ac.kr (J.J. Kim), heesup.han@gmail.com, heesup@sejong.ac.kr (H. Han).
[1] ORCID: 0000–0001-6356–3001

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Kim and Han, 2020). This is also a reason why the hotel selection attributes are constantly examined to this day, which apparently addresses the urgent call for revisiting the hotel selection attributes in the current COVID-19 environment.

A lot of empirical evidence supports the disparity between the expectations that are based on the importance that is placed on the hotel selection attributes and evaluation according to the actual experience (Kim et al., 2019; Manhas and Tukamushaba, 2015). Attracting new customers is indispensable for the improvement of business performance, and understanding the hotel selection attributes of target customer segment are of great importance (Shanahan and Hyman, 2007). Converting an ad hoc visitor to a patron with a high degree of loyalty is the key to the success of a firm, and the actual experience is therefore of equal importance (Lai, and Hitchcock, 2016). This indicates that the practitioners should understand how the consumers perceive the importance of the attributes when they select the hotels as well as how the consumers assess the performance of those important selection attributes (Chu and Choi, 2000; Kim et al., 2019). This study therefore adopted an importance-performance analysis (IPA), which enables a clear understanding of the hotel selection attributes that are deemed to be important by the consumers and how the performance level of each of the attributes are rated based on the individuals' evaluation. These endeavors would be helpful in order to comprehend the strengths and the weaknesses of the current offerings, and they will consequently aid to business competitiveness.

Meanwhile, the performance of the attributes is linked to the image of the company or the brand, since the image is developed and authenticated through the consumers' actual experiences (Manhas and Tukamushaba, 2015). The service sectors force the individuals to anchor their intentions in order to become strong on more dependable cues, such as the image of the company (Ostrowski et al., 1993). Also, building a favorable image of a company is imperative for every hotel in order to obtain repeat business in a competitive market. Hence, the present study aims to provide evidence regarding how the performance of the hotel selection attributes influences the overall image of a hotel, which consequently increases individual intentions to revisit a hotel.

The existing studies that pertain to the COVID-19 pandemic in the context of the hotel industry mainly deal with the impact of COVID-19 on hotels (Filimonau et al., 2020; Hao et al., 2020; Jiang and Wen, 2020). There are also endeavors, which are albeit limited, that contributed to examine consumer behavior (Han et al., 2020; Shin and Kang, 2020). Nevertheless, attempts have seldom been made to reassess the hotel selection attributes during the COVID-19 outbreak. Also, the existing literature contains limited evidence about the performance level of a new set of hotel selection attributes regarding the formation of consumer intentions. A summary of the previous discussion points out the purposes of the research, which include (1) exploring the hotel selection attributes after the outbreak of COVID-19, (2) comparing the importance of the hotel selection attributes before and after the COVID-19 outbreak, (3) examining the importance-performance of the hotel selection attributes in the era of the COVID-19 pandemic, and (4) investigating the associations among the performance of the hotel selection attributes, the overall image of the hotel, and the revisit intentions.

2. Literature review

2.1. Hotel selection attributes

The comprehension of the attributes play a driving role for the hotel selection, which are vital for the success of hotels, and substantial efforts have been made in order to identify the determining selection attributes (Chu and Choi, 2000; Francesco and Roberta, 2019; Shanahan and Hyman, 2007). Tsai et al. (2011) explored the hotel selection attributes of Mainland Chinese and foreign travelers to Hong Kong. The mainland Chinese visitors rated the location of a hotel, which is convenient to tourist attractions, as the most important attribute, whereas the foreign travelers indicated that an efficient check-in/out is the most essential criteria. Accordingly, the authors concluded that the different perceptions regarding the important hotel selection attributes depend on the cultural background. Kim et al. (2019) focused on the local guests in South Korea, and they identified a total of 23 hotel selection attributes, which involve intangible and tangible attributes. Cleanliness and the room features, which include the bed, the size of the room, and the amenities were regarded as the most important attributes among them for a hotel choice. Wang et al. (2020) investigated the differences in hotel selection among the different groups of travelers through online reviews. Their results revealed that business travelers, couples, families, friends, and solo travelers indicated that value, location, room features, cleanliness, and value are the most important criteria, respectively. Even though the existing findings are difficult to reconcile the key hotel selection attributes, an extensive review of the literature suggests the following common hotel selection attributes: accessibility, cleanliness, convenient check-in/out, hotel class, the exterior, the lobby, scale, reputation, reviews, hygiene, employee attributes, such as friendliness, appearance, and professionalism, and room features, such as the bed, the room size, the view, and the amenities as well as the value for the money, safety, and security.

2.2. Hotel selection attributes under the management of COVID-19

Coronavirus is an infectious illness that spreads through the respiratory system when an infected person coughs or sneezes (WHO, 2020b). The outbreaks of contagious diseases cause sudden downturns in the international tourism demand, and several instances in the past, such as SARS-CoV and the middle ease respiratory syndrome (MERS-CoV) provide evidence regarding the decrease in demand (Chien and Law, 2003; Choe et al., 2020; Henderson and Ng, 2004). Similarly, the COVID-19 pandemic drastically reduced the demand for hotels even more than these other disease (Statista, 2020). Furthermore, several experts stated that the hotel performance will take several years to return to the level it was at before the outbreak (PricewaterhouseCoopers, 2020).

In the era of the coronavirus pandemic, crisis management, which is also called risk management, tends to dominate the discussions in the hotel industry. More intense cleaning and hygiene guidelines are adopted by almost every hotel in order to ensure a healthy environment and diverse contactless services are employed at hotels in order to create an untact environment, which are ways to navigate the road to recovery. In other words, more intense room cleaning is conducted with a focus on high-touch points, such as door and furniture handles, and the hotel staff may no longer escort guests to the rooms (CNBC, 2020). Also, hotels make the provision of equipment and various tools, and they implement new protocols in order to control the spread of coronavirus. For instance, there are stations at the Hilton hotels that allow the guests to wipe the elevator buttons before pressing them, and the hotels add an extra measure of assurance by placing a room seal on the doors in order to indicate to the guests that their room has not been accessed after it was thoroughly cleaned (Hilton, 2020). The practitioners de-clutter paper amenities that involve removing pens, paper, and guest directories, and they provide supplements with digital options. In addition, a number of hoteliers asserted that touch-free services are the key focus, and they have developed new service manuals in pursuit of contactless service (Marriott, 2020). The hotels around the world have indeed placed various precautionary measures in order to help prevent the spread of coronavirus, which are illustrated in the examples in Table 1.

2.3. Importance of the hotel selection attributes before and after the outbreak of COVID-19

The perceived importance of the hotel selection attributes varies considerably depending on diverse factors. One of the known

Table 1
Summary of the precautionary measures against COVID-19 at major hotel companies.

	Tools & Equipment	Social distancing	Cleaning & Disinfection
Accor	• Thermal scanners at the main entrance • Individual sanitizer, wipes and masks • Guest temperature measurement practices, disinfectant mats at the entrance	• Social distancing enforced in all common areas • Contactless payment solution and desk-free check in wherever possible • Maintaining 1 m distance across tables and maximum 8 people per table	• The ALLSAFE label- new elevated cleanliness protocols and standards • Strengthened room cleaning protocols including extra disinfection of all high touch • Increase the frequency of cleaning public areas
Hilton Worldwide	• Thermal scanners at the main entrance • Electrostatic sprayers which use an electrostatically charged disinfecting mist • Ultraviolet light to sanitize surfaces and objects • Stations for disinfectant wipes at primary entrances and key high traffic areas	• Contactless check-in powered by digital key technology • Limiting the number of guests allowed in at one time in the closed area such as fitness center	• Hilton CleanStay Room Seal • De-clutter paper amenities • Working with RB and the Mayo Clinic for a new standard of cleanliness/ disinfection. • Increased frequency of cleaning public areas • Improved guidelines for disinfecting the hotel
Hyatt Hotels Corporation	• Thermal scanners at the main entrance • Purification and sanitation devices • Sanitizer stations prominently placed throughout the hotel • Colleagues required to wear personal protection equipment in all areas of hotel	• Capacity guidelines at elevators and all public spaces • Knock-and-go contactless room service • Plexiglass partitions at high engagement areas	• Increase the frequency of sanitizing public spaces with electrostatic sprayers. • Removal of certain high-touch items from guestrooms
InterContinental Hotels Group	• Thermal scanners at the main entrance • Guidance on the use of protective equipment as necessary by hotel colleagues • Hand sanitizer and disinfecting wipes at high-touch points throughout the hotel • Sanitized key cards and paperless checkout	• Social distancing protocols (eg. meeting room layout) and enforcement of best practices in shared spaces • Social distancing operating signage • Single-serve and pre-packaged meal options	• Intensified cleaning of high-touch surfaces, "last cleaned" logs • Availability of individual guest amenity cleaning kits • In-room IHG Clean Promise cards with cleaning procedures
Marriott International	• Thermal scanners at the main entrance • Hand sanitizing stations throughout the hotel • Partitions at check-in • Ultraviolet light technology for sanitizing guest keys and devices shared by associates	• Signage in its lobbies to remind guests to maintain social distancing. • Removing or re-arranging furniture. • Seating are kept at 2.5 meters between tables, with only 4 people allowed in each table (reduction of restaurant capacity to 60%) • Less contact through services including mobile check-in, mobile key, and mobile requests	• Electrostatic sprayers with hospital-grade for disinfectant to sanitize surfaces throughout the hotel. • Increase the frequency of cleaning/ disinfection using a 70% alcohol based disinfectant spray.

Source: Websites of each hotel company (accor.com / hilton.com / hyatt.com / intercontinental.com / marriott.com)

environmental factors is the crisis of an epidemic, which directly affects individuals' travel behavior (Mao et al., 2010). For example, cleanliness and hygiene were essential for the successful hotel operations after the 2003 SARS outbreak (Kim et al., 2005), and the studies show that the individuals are influenced by these conditions when making decisions regarding their hotel selection (Chien and Law, 2003; Choe et al., 2020; Henderson and Ng, 2004). Since the outbreak of COVID-19, new regulations have been proposed and implemented in order to combat the virus. For instance, the New South Wales government encouraged business entities to have a comprehensive COVID-19 safety plan in place, and these businesses and organizations are recognized by the blue tick COVID safe badge for use on their premises or online (NSW Government, 2020). The Centers for Disease Control and Prevention recommended maintaining social distancing in hotels by minimizing traffic in enclosed spaces and using technological solutions where possible in order to reduce person-to-person interactions (CDC, 2020). In addition, the hotels promote a new set of hotel attributes in order to entice the customers, and the customers have appreciated the different attributes after the COVID-19 outbreak.

COVID-19 disrupts our daily routine, which include every aspect of consumer behaviors, such as hotel selection. However, there are few findings that exist in the academia. Yu et al. (2021) examined the individuals' perception of the hygiene attributes of a hotel during the COVID-19 outbreak, and they proposed that the hygiene of customer used space, the personal hygiene of the staff, and the workspace hygiene as the underlying dimensions of the hygiene attributes of a hotel. This implies that the hotel selection attributes are reconstituted over the period of the coronavirus pandemic, and the important attributes perceived by the customers regarding a hotel selection changed before and after the COVID-19 outbreak. Furthermore, numerous studies determined that the focus on business operation hotels has shifted due to COVID-19 (Hao et al., 2020; Jiang and Wen, 2020). Hotels more than ever heavily rely on restoring customer confidence around accommodation safety, because they acknowledge that today's consumers are largely prevention-focused individuals. These empirical cues are the reason for formulating the following hypothesis:

H1. Perceived importance of the hotel selection attributes has changed before and after the COVID-19 outbreak.

2.4. Comparison between the importance and the performance of the hotel selection attributes

An understanding of the importance regarding what consumers perceive toward the hotel attributes provides a clue in order to allocate resources effectively, which would be helpful for attracting new

customers (Kim et al., 2019; Martilla and James, 1977). In addition, comprehension about how individuals perceive the performance of the hotel attributes compared to the importance aids to identify the specific areas that require enhancement in order to be more successful (Beldona and Cobanoglu, 2007; Martilla and James, 1977). Therefore, many scholars endeavored to determine how similar or different individuals perceive the importance and the performance of the hotel attributes in order to offer the practitioners a clear direction to establish strategic plans.

The prior findings have provided evidence of the disparity of the importance and performance of the hotel selection attributes across different settings (Bi et al., 2019; Chen and Chen, 2014; Lai and Hitchcock, 2016). Chu and Choi (2000) investigated the level of the importance and performance of the hotel selection attributes perceived by travelers in Hong Kong, and they observed an apparent difference with various factors, such as service quality, room features, and security. Moreover, they addressed the results that disparity differs by business and leisure travelers. Beldona and Cobanoglu (2007) focused on innovative technologies that are adopted by the hotel industry, and they examined how the U. S. consumers perceived the performance compared to the importance of these attributes. Their results indicated that alarms and in-room temperature controls fail to perform in the way that the individuals consider as important technologies. They further investigated how the controls differ by the frequency of traveling. Wilkins (2010) tested the customer perspectives on the hotel selection factors based on the data collected from first class and luxury hotels in Australia. The author identified a number of areas, such as the quality of the staff, which display different levels of importance and performance. Kim et al. (2019) analyzed the degree of importance and performance of the selection attributes that were subjected to the local guests' hotel stays in South Korea. They exhibited significant disparity of the value for the money, cleanliness, and safety and security in the customers' evaluation of the importance and performance. Drawing on these prior findings, this study posited the following hypothesis.

H2. The perceived importance and performance of each hotel selection attribute are dissimilar.

2.5. Effect of the performance of the hotel selection attributes

The image of a company refers to the perception created by the individuals' direct and indirect interaction with a company (Dichter, 1985). The overall image of a company in the hotel context was generally described with the accumulative approach (Jani and Han, 2014), which suggests that the image is formulated over time rather than with one event. Likewise, the overall image of a hotel involves the evaluation of various hotel attributes where the customers interact during their entire journey.

The prior studies commonly support that the fulfillment of a need with the product/service offerings contributes in order to shape the overall image of a company (Han and Hwang, 2018). Thus, customer experiences with the attributes and the quality of the products/services provided are often examined as the fundamental driving forces of the creation of a corporate image. For instance, Kandampully and Hu (2007) confirmed the significant relationship between the service quality and the image of a corporation in the hotel context. Cham and Easvaralingam (2011) evaluated the relationship between the service quality and the image of hotels in Malaysia, and their results discovered a significance in the link. Qian et al. (2020) presented how event making, excellent amenities and services, exquisite food, promotions, and special function venues contributed to building the image of a luxury hotel. Yu et al. (2021) explained that the image of a hotel underlies cognitive and affective images that interact with each other, which are influenced by the core hotel attributes. These current studies suggest that the overall image of a hotel relies on the performance of the attributes. The relationship between a set of attributes and the overall image is alternatively explained by the complexity theory, which suggests that complex interactions and a combination of the attributes are employed in order to predict the individuals' behavior in the tourism context (Baggio, 2008). For instance, Han et al. (2019) explained the effect of halal-friendly attributes in order to form an image of a destination based on the complexity theory. Hence, the following hypotheses are formulated.

H3a~f. The perceived performance of the hotel selection attributes enhances the overall image of the hotel.

2.6. Effect of the image of a hotel company

The concept of intentions to revisit derives from the behavioral intentions, which are defined as "a stated likelihood to engage in a behavior" (Oliver, 1997, p. 28). When individuals assess attributes positively and favorably compared to the attributes of their competitors, they then display revisit intentions, which is an affirmed likelihood to revisit a specific hotel (Kim et al., 2019). Hence, there is no doubt that an increase of revisits by the existing customers is vital in today's highly competitive market.

The image of a company is formulated by the customers' experience with the brand and/or service providers, and the image influences the individuals' purchase behavior (Jani and Han, 2014). Likewise, the prior studies determined the association between the overall image of a company and the revisit intentions. For example, Han et al. (2009) centered on the individuals' eco-friendly behavior in the hotel industry, and their analysis results verified that the overall image significantly affects the visit intentions. Han and Hwang (2018) studied the image of a healthcare hotel, and they discovered its significant role regarding increasing the customers' positive behavioral intentions. They determined that an affective image is an essential trigger of the overall image of a healthcare hotel, which influences the individuals' intentions to visit the hotel. Yu et al. (2021) conducted an empirical study more recently, and they confirmed that the image exerted a significant influence on the intentions to revisit the hotel. These early studies support the association between the performance of the hotel selection attributes and the image of the hotel, which resulted in the following hypothesis being formulated.

H4. The overall image of the hotel enhances the intentions to revisit the hotel.

3. Methods

3.1. Qualitative approach for the hotel selection attributes due to COVID-19

The extant literature provides ample evidence of the various attributes of a hotel selection before the COVID-19 outbreak. In order to explore and identify the new facets of the hotel selection attributes, which were formulated due to COVID-19, multiple in-depth interviews were conducted with a focus group. A series of interviews were conducted more specifically with twelve individuals who are practitioners from major global chain hotel companies, which included Hilton Worldwide, Marriott International, and frequent travelers who stayed at hotels both before and after the COVID-19 outbreak.

The participants were provided with the objective of the study prior to the interviews as well as an interview to improve the quality of the in-depth interviews. Open-ended questions were then asked to guide the participants to brain-storm in order to discuss a new set of hotel attributes, which are important for the customers to select a hotel after the COVID-19 outbreak. Questions that were given to the hotel professionals include (1) *what type of new protocols and manuals have been implemented in the hotels since the COVID-19 outbreak?* and (2) *how would you describe the core hotel attributes after the COVID-19 outbreak?* There were also opportunities during the interviews to capture new sets of precautionary measures that were placed in the hotels at the hotel sites, which are illustrated in Appendix A. The interviews with the frequent travelers were conducted with questions, such as (1) what important hotel

attributes do you consider when you choose a hotel after the COVID-19 outbreak? and (2) what kind of new products and services will lead you to select a hotel to stay at these days?

The interviewees freely discussed their perspectives from their own experiences and their expertise with the hotel operations, which they shared the opinions in diverse aspects. In conjunction with the various precautionary measures against COVID-19, there were insights that were related to other customers. Since coronavirus spreads mainly from person to person, other customers are of importance to the hotel selection. For example, the focal customer concerns involve other customers' wearing face masks and following physical distancing guidelines. This qualitative approach through on-site visits and interviews drew eleven new hotel selection attributes due to the COVID-19 outbreak, which included precautionary tools, the QR-code based entry logs, contactless services, regular disinfections, mandatory enforcement of employees' wearing facial masks and sanitary gloves, and the behavior of the other customers. These results resulted in a total of forty-three attributes, which include the attributes that are commonly found before the COVID-19 outbreak.

3.2. Quantitative approach for the hotel selection attributes

3.2.1. Measurement development for the other study variables and the survey structure

The survey was planned in order to obtain the consumers' perspectives concerning the hotel selection attributes, the overall image of the hotel, and the post-purchase behavior considering the impact of COVID-19. Apart from the hotel selection attributes, the measurement items for the other constructs were adapted from the existing literature that pertains to the hotel industry. Three items, which included *my overall image of this hotel is positive*, were borrowed from Jani and Han (2014) and Han and Hwang (2018) in order to assess the overall image of a hotel. Another three items, which included *I intend to revisit this hotel in the future*, were cited from Kim et al. (2019) for the evaluation of the intentions to revisit. All the items in this study were measured using a 7-point Likert's scale.

The survey began with the purpose of the survey, which included a promise regarding the respondent's anonymity and confidentiality of the responses. The first section of the survey involves the questionnaires that were distributed in order to measure the importance and performance of the hotel selection attributes. In particular, the participants were required to assess before and after the COVID-19 outbreak separately. The second section includes questions that were asked to assess the other variables of the research model. The last section contains questions regarding the demographic profile of the participants and hotel stay experience. The first form of the questionnaire was pre-tested with six individuals, and it was refined by academic specialists and stakeholders in the hospitality industry.

3.2.2. Survey procedure and data collection

The data collected by an online survey company in South Korea, which sent an e-mail invitation for the survey to 6084 members at the end of September 2020. The screening questions were asked in order to limit the responses from individuals who have stayed at four or five star rated hotels before and after the COVID-19 outbreak. In addition, the participants were required to indicate the hotel name, their companions, and the length of stay in order to refresh their memories.

A total of 380 usable responses were obtained, and the multivariate outliers were removed using the Mahalanobis distance, which is an application in multivariate anomaly detection, which is used for the classification of highly imbalanced datasets and one-class classifications. As a result, 347 responses were employed for the data analysis through SPSS and AMOS software. The sample comprised of 176 females and 171 males with an average age of 44.81. Meanwhile, 68.6% (238) of the respondents are university degree holders and 12.7% (44) are graduate degree holders. The rest (18.7%) of the respondents are diversified within a range from individuals who have less than a high school diploma to individuals who have an associate's degree. With respect to the monthly income, 22.5% (78) earned below $3000, 18.4% (64) earned between $3000-$3999, 11.5% (40) earned between $5000-$5999%, and 11.2% (39) earned between $4000-$4999. The rest (36.4%) of the respondents stated that they earn more than $6000 and up to more than $10,000.

The main intervals of the responses regarding their hotel stay experience are as following. When the respondents were asked to state their stay frequency at hotels before the COVID-19 outbreak, 40.3% (140) of the participants indicated that they stayed at a hotel three to four times a year, 22.8% (79) stayed at a hotel once to twice a year, and 20.7% (72) stayed at a hotel five to six times a year. In regards to the period of their most recent hotel stay after the COVID-19 outbreak, 27.4% (95) of the respondents indicated that it was during August 2020, and 17.3% (60) indicated that they stayed at a hotel during July 2020. Most of the respondents, which accounted for 82.7% (287), stayed at hotels for leisure purposes. 38.0% (132) of the respondents indicated that they traveled with their spouses/partners, and 34.9% (121) of them traveled with their family. In terms of the length of stay, 43.2% (150) stayed for one night and 42.1% (146) stayed for two nights.

4. Results

4.1. Hotel selection attributes

This study employed an exploratory factor analysis (EFA) using a principal components analysis and the Varimax orthogonal rotation method to determine the underlying dimensions of the hotel selection attributes (Hair et al., 2006). The selection of the variables was found to be appropriate, and it was based on the Kaiser-Meyer-Olkin value (0.949), which is a measure of how well suited our data is for a factor analysis, and the significance of Bartlett's test of sphericity ($p < .001$), which compares an observed correlation matrix to the identity matrix (George and Mallery, 2010). The items that showed low factor loadings (<0.40) and cross-loadings were removed except for one item, which is exterior, since the researchers suggested the minimum three items in order to represent each factor (MacCallum et al., 1999; Raubenheimer, 2004). A total of twenty-six items were then retained from the originally developed forty-three items. The results of the EFA indicated a total of six factors with eigenvalues of 1 or more, and the total variance of the six derived factors was 60.292%. Table 2 contains a summary of the EFA results.

The generated factors were labeled according to their respective measurement items as follows. Factor 1 = precautionary measure, factor 2 = functional quality, factor 3 = employee attribute, factor 4 = outward appearance, factor 5 = social servicecape, and factor 6 = brand value. Furthermore, a reliability analysis was conducted in order to test the internal consistency retained in each underlying factor. The results displayed that the Cronbach's Alpha coefficients of the six factors ranged from.737 to.925, which confirmed an acceptable level (Nunnally, 1978).

4.2. Comparison of the importance of hotel selection attributes

This study performed the paired t-test to assess the change between the importance of the hotel selection attributes before and after the COVID-19 outbreak, which are shown in Table 3.

The average value of the importance before the COVID-19 outbreak is 5.248 and the average value after the COVID-19 outbreak is 5.670, so Hypothesis 1 is supported. A significant increase of the importance was found from the precautionary measures (27.58% higher), brand value (8.15% higher), and social servicecape (7.44% higher) after the COVID-19 outbreak compared to the importance before COVID-19. The QR code-based entry log, which was newly adopted after the COVID-19 outbreak, more concretely displayed the highest increase on the importance. Also, the behavior of the other customers among social

Table 2
Results of the exploratory factor analysis.

Factors (loadings)	Eigenvalues	Variance explained (%)	Cronbach's alpha
Factor 1: Precautionary measure	**5.975**	**14.227**	**.925**
Precautionary tools (0.836)			
Social distancing (0.808)			
QR-code based entry log (0.806)			
Hygiene (0.486)			
Cleanliness (0.734)			
Factor 2: Functional quality	**4.589**	**10.926**	**.877**
Accessibility (0.681)			
Convenient check-in/out (0.617)			
Room with a view (0.350)			
Value for money (0.570)			
Bed (0.518)			
Size of room (0.438)			
Room amenity (0.429)			
Factor 3: Employee attribute	**4.329**	**10.307**	**.848**
Appearance of employees (0.603)			
Professionalism of employees (0.663)			
Friendliness of employees (0.646)			
Factor 4: Outward appearance	**3.652**	**8.695**	**.750**
Exterior (0.121)			
Scale (0.673)			
Lobby (0.459)			
Factor 5: Social servicecape	**3.638**	**8.661**	**.815**
Appearance of other customers (0.788)			
Similarity of other customers (0.718)			
Behavior of other customers (0.711)			
Factor 6: Brand value	**3.140**	**7.476**	**.737**
Reputation (0.724)			
Class (0.698)			
Loyalty program (0.459)			
Guest reviews (0.438)			
Density (0.408)			
KMO and Bartlett's test = 0.949, Sig = 0.000		**Total**: 60.292%	

Source: SPSS (Statistical Package for the Social Sciences) 20.0

servicecape and density among brand value were the hotel attributes that exhibited the greatest change in perceiving importance.

4.3. Importance-performance grip of the hotel selection attributes

The IPA technique has been frequently adopted with the comprehension of the hotel selection attributes, which is based on the usefulness in order to make strategic decisions in the area of multi-attribute models (Chu and Choi, 2000; Kim et al., 2019). Likewise, this study used an IPA that was proposed by Martilla and James (1977) in order to determine the strengths and weaknesses of the hotel selection attributes. Fig. 1 illustrates a total of 26 hotel selection attributes that were applied into the IPA grid, and it also confirmed Hypothesis 2, which posited the disparity between the perceived importance and performance of each hotel selection attribute.

The results visualized the attributes that belong to four quadrants, which include *concentrate here*, *keep up the good work*, *low priority*, and *possible overkill*. The quadrant *keep up the good work* depicts the attributes that are considered to be important when the individuals select a hotel, and they are perceived as well-performed during their actual stay experience. All of the precautionary measures and some of the function quality were categorized in this quadrant. On the other hand, the attributes with low importance and low performance are listed in the *low priority* quadrant. Also, appearance and the similarity of other customers and all outward appearances were turned out in this area. The *possible overkill* quadrant contains the attributes of low importance but relatively high performance. The appearance of employees, accessibility, and class were found in this quadrant of all the attributes.

4.4. Relationships among study variables

The structural equation modeling (SEM) with the maximum likelihood estimation method was conducted in order to examine the proposed relationships among the study variables, which are illustrated in Table 4.

The analysis results indicated the model fit of $\chi^2 = 1133.660$, $df = 441$, $p < .001$, $\chi^2/df = 2.571$, RMSEA = 0.067, CFI = 0.916, IFI = 0.917, NFI = 0.871, and TLI = 0.906 which is acceptable (Byrne, 2001). The RMSEA, which is an absolute fit index, refers the root mean square error of approximation and an RMSEA value < 0.08 is regarded as a reasonable model. The CFI (comparative fit index), IFI (incremental fit index), NFI (normed fit index), and TLI (Turker-Lewis index) are incremental fit indices, which are regularly used when assessing the fit of the structural equation models. A value of.90 or larger with these incremental fit indices is generally considered to indicate an acceptable model fit. A total of seven hypotheses were tested based on the results of the SEM providing β (beta), which is a standardized coefficient on the path. Regarding the effect of the hotel selection attributes on the overall image of the hotel, the precautionary measure (H3a: $\beta = 0.250$ and $p < .01$), employee attribute (H3c: $\beta = 0.178$ and $p < .05$), and brand value (H3f: $\beta = 0.373$ and $p < .01$) exhibited significance. However, the influences of functional quality, outward appearance, and social servicecape on the overall image of the hotel were not statistically supported. The association between the overall image of a hotel and the intentions to revisit the hotel was supported ($\beta = 0.832$ and $p < .001$), so Hypotheses 4 was confirmed. The total variance of the overall image of a hotel was 67.4% and the intentions to revisit the hotel was 69.3%.

5. Discussions and implications

5.1. Discussions

A new set of hotel selection attributes due to COVID-19 was identified through both the qualitative and quantitative procedures. Reviewing the extant literature and conducting the focus group interviews are common methods that are employed in order to explore the underlying facets of the attributes (Kim and Han, 2020). The present study adopted a qualitative approach, which is derived from both sources. The quantitative procedure was then performed in order to validate the hotel selection attributes, which were categorized by precautionary measures, functional quality, employee attributes, outward appearance, social servicecape, and brand value. These results echoed the prior findings that functional quality, such as convenient check-in/out, the value for the money, and the employee attributes, such as friendliness and professionalism were validated as the key hotel selection attributes (Chu and Choi, 2000). In addition, the findings of this study are consistent with studies that confirmed brand value, which included reputation and outward appearance, such as scale and the lobby as essential hotel selection attributes (Kim et al., 2019). With respect to precautionary measures, this study is in line with the findings of the study that was conducted by Yu et al. (2021) and supports studies that include cleanliness as a core attribute (Kim et al., 2019). On the other hand, social servicecape was newly presented as an essential hotel selection attribute under COVID-19 management.

This study compared the importance of the hotel selection attributes pre-COVID-19 and post-COVID-19 outbreak, and the differences were discovered. An increase was found for every hotel selection attribute except for the exterior and lobby. This result suggests that the outward

Table 3
Results of the paired t-test.

Measurement item		Importance before the outbreak of COVID-19		Importance after the outbreak of COVID-19		t-value	p-value
		Mean±S.D.	Rank	Mean±S.D.	Rank		
PM	Precautionary tools	4.677 ± 1.450	22	6.481 ± 0.913	2	-20.064	.000
	Social distancing	4.190 ± 1.665	25	6.455 ± 0.925	3	-21.622	.000
	QR-code based entry log	4.009 ± 1.789	26	6.257 ± 1.020	5	-19.741	.000
	Hygiene	6.182 ± 1.011	1	6.496 ± 0.898	1	-6.901	.000
	Cleanliness	6.135 ± 0.975	2	6.455 ± 0.903	4	-7.192	.000
	Average	5.039 ± 1.378		6.429 ± 0.932			
FQ	Accessibility	5.556 ± 1.075	9	5.637 ± 1.131	15	-1.549	.122
	Convenient check-in/out	5.556 ± 1.056	9	5.744 ± 1.123	11	-3.819	.000
	Room with a view	5.663 ± 1.056	7	5.726 ± 1.074	12	-1.440	.151
	Value for money	5.942 ± 1.035	4	5.945 ± 1.050	8	-0.067	.947
	Bed	5.836 ± 1.050	5	5.922 ± 1.095	9	-2.100	.036
	Size of room	5.187 ± 1.018	14	5.392 ± 1.041	19	-4.174	.000
	Room amenity	5.415 ± 1.014	11	5.510 ± 1.092	17	-2.183	.030
	Average	5.594 ± 1043		5.697 ± 1.087			
EA	Appearance of employees	5.597 ± 1.015	8	5.646 ± 1.093	13	-1.358	.175
	Professionalism of employees	5.830 ± 0.963	6	5.862 ± 1.058	10	-0.775	.439
	Friendliness of employees	5.951 ± 1.029	3	5.989 ± 1.037	7	-0.870	.385
	Average	5.793 ± 1.002	5.832 ± 1.063				
OA	Exterior	5.029 ± 1.088	17	4.954 ± 1.201	23	1.655	.099
	Scale	5.164 ± 1.104	15	5.285 ± 1.126	21	-2.371	.018
	Lobby	4.873 ± 1.161	19	4.873 ± 1.161	24	.000	1.000
	Average	5.022 ± 1.118		5.037 ± 1.163			
SS	Appearance of other customers	4.605 ± 1.291	24	4.790 ± 1.321	26	-3.617	.000
	Similarity of other customers	4.648 ± 1.253	23	5.017 ± 1.351	22	-6.173	.000
	Behavior of other customers	5.017 ± 1.122	18	5.527 ± 1.238	16	-4.994	.000
	Average	4.757 ± 1.222		5.111 ± 1.303			
BV	Reputation	5.144 ± 1.105	16	5.366 ± 1.139	20	-4.183	.000
	Class	5.219 ± 1.114	13	5.499 ± 1.097	18	-5.064	.000
	Loyalty program	4.781 ± 1.292	21	4.793 ± 1.285	25	-0.222	.825
	Guest reviews	5.401 ± 1.179	12	5.643 ± 1.226	14	-4.829	.000
	Density	4.849 ± 1.217	20	6.164 ± 1.163	6	-15.705	.000
	Average	5.079 ± 1.181		5.493 ± 1.182			
Average		5.248 ± 1.158		5.670 ± 1.106			

Source: SPSS (Statistical Package for the Social Sciences) 20.0
Note: PM = precautionary measure, FQ = functional quality, EA = employee attribute, OA = outward appearance, SS = social servicecape, and BV = brand value

appearances are relatively less important than the other hotel attributes. Meanwhile, a dramatic increase of importance regarding the precautionary measure was revealed after the COVID-19 outbreak, which is somewhat expected due to the new regulations that were implemented by the authorities (CDC, 2020). Individuals who stay overnight at a hotel should register, but that does not include any customers who are in and out the hotel for other purposes, such as meetings. Since the QR code-based entry log was adopted after the COVID-19 outbreak, this system is acknowledged, because it contributes to investigating the origins of the infection and the pattern of its spread (Asia Times, 2020). Likewise, this study provides empirical evidence that people perceive the implementation of the QR code-based entry log as very important. Furthermore, cleanliness, hygiene, and safety have not been ignored in the past, and the results of this study indicate the importance of these criteria remain, which is even stronger after the COVID-19 outbreak. Meanwhile, density exhibited a significant change on the level of importance before and after the COVID-19 outbreak, and this study infers that density may be perceived differently before and after the pandemic. This means that density was deemed popular before the pandemic, but it is now regarded as the risk of COVID-19.

The IPA illustrated each hotel attribute into four different quadrants that enabled us to understand the strengths and weaknesses. All of the precautionary measures were categorized in the *keep up the good work* quadrant, which provides evidence as to how effective the current precautionary measure against COVID-19 are placed in hotels. Also, this result is coherent with the previous findings by Kim et al. (2019), which identified cleanliness as an important and well-performed attribute for Korean guests for their staycations. This study conversely observed that outward appearance, such as exterior and lobby in the *low priority* quadrant, which suggests the requirement of limited resources. The *possible overkill* quadrant contains the appearance of the employees, accessibility, and class. Meanwhile, none of the hotel attributes were found in the *concentrate here* quadrant, which is where the individuals assessed a fairly low performance compared to a high importance. According to the results of the SEM, this study identified the performance of the precautionary measures, employee attributes, and brand value bear a positive impact on the overall image of a hotel. Furthermore, the relationship between the overall image of a hotel and the intentions to revisit a hotel were significant. These findings are consistent with studies that were conducted by Han and Hwang (2018) and Yu et al. (2021).

5.2. Theoretical implications

First, this study is among the first to explore the hotel selection attributes that reflect the impact of COVID-19. It is meaningful in regards to preparation for a prolonged COVID-19, as well as in the long term, since people generally perceive the risk against a possible new pandemic caused by a novel virus. The practitioners in hotels require precise information about what attributes of the hotels are important to the potential customers in order to increase their market share (Spoerr, 2020). In this respect, the present study successfully revisited the hotel selection attributes after the outbreak of COVID-19. Yu et al. (2021) emphasized the importance of the hotel hygiene attributes in order to overcome the crisis, and they more specifically proposed that the hygiene of customer-use space is vital. This study conveys the same findings regarding the importance of hygiene, and it brings attention that the core hotel attributes, such as employee attributes and the brand value remain important. Social servicecape was notably newly proposed as a hotel selection attribute. It is attributed to the nature of COVID-19,

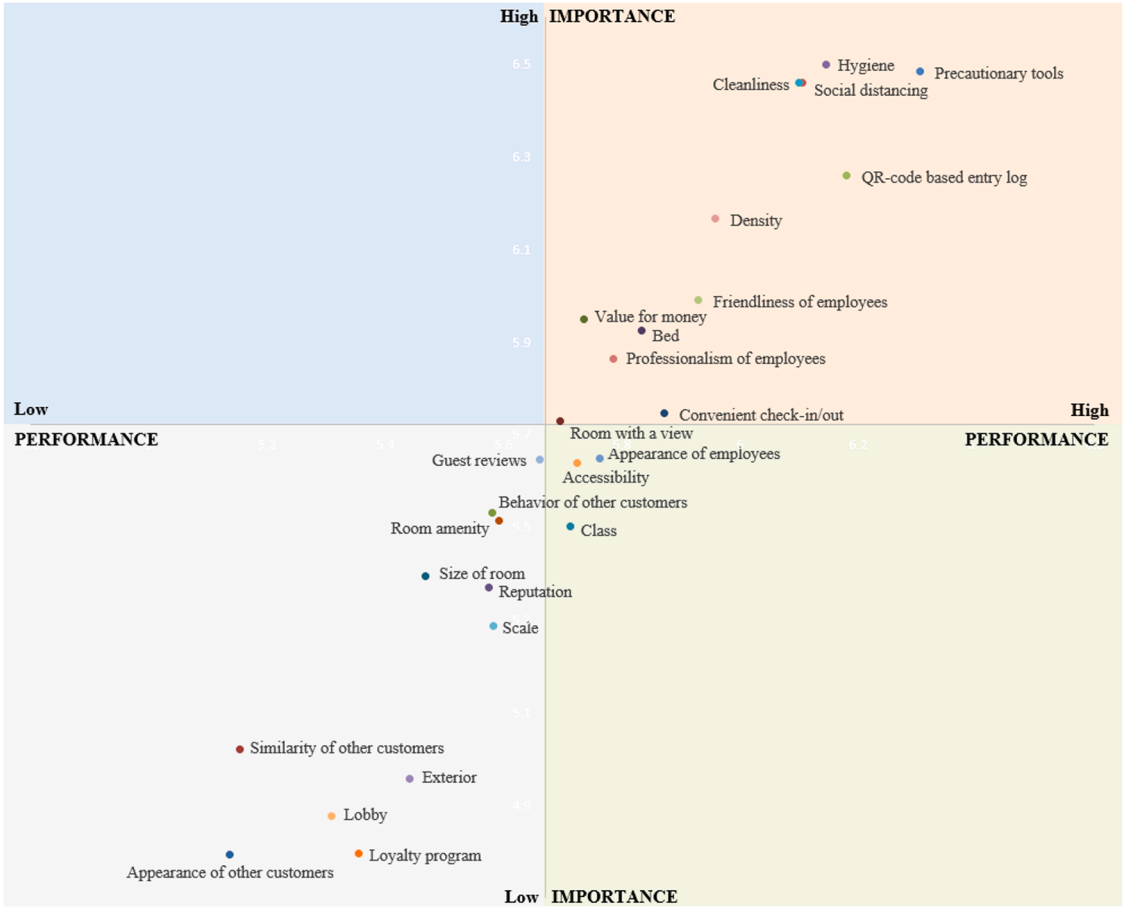


Fig. 1. Results of importance-performance analysis, Note: Quadrant with orange color = keep up the good work, quadrant with blue color = concentrate here, quadrant with gray color = low priority, and quadrant with green color = possible overkill.
Source: SPSS (Statistical Package for the Social Sciences) 20.0.

Table 4
Results of the structural model evaluation and hypotheses testing.

Path			Coefficients	t-values	Status
H3a	Precautionary measure	→ Overall image of the hotel	.250	2.856**	Supported
H3b	Functional quality		.173	1.121	Rejected
H3c	Employee attribute		.178	2.085*	Supported
H3d	Outward appearance		-0.003	-0.022	Rejected
H3e	Social servicecape		-0.084	-1.341	Rejected
H3f	Brand value		.373	3.038**	Supported
H4	Overall image of the hotel	→ Intentions to revisit the hotel	.832	18.149***	Supported

Source: AMOS (Analysis of Moment Structure) 20.0
Total variance explained. R^2 for overall image of the hotel = 0.674; R^2 for intentions to revisit the hotel = 0.693
Goodness-of-fit statistics: $\chi 2 = 1133.660$, df = 441, $p < .001$, $\chi 2/df = 2.571$, RMSEA = 0.067, CFI = 0.916, IFI = 0.917, NFI = 0.871, and TLI = 0.906
Note 1: * $p < .05$, * * $p < .01$, and * ** $p < .001$
Note 2: R^2 indicates the proportion of variance in the dependent variable accounted for by the set of the independent variables.

which is spread via human-to-human transmission. This means that the individuals are concerned with how other customers follow the precautionary guidelines, which include covering their noses and mouths when sneezing or coughing, frequently washing hands, and wearing face masks.

Second, this study endeavored to visualize the importance and performance of the hotel selection attributes after the COVID-19 outbreak for the first time. In fact, we learned about the effect of epidemics on the hotel industry from the current COVID-19 incident as well as from the past experiences, which include SARS-CoV and MERS-CoV (Chien and Law, 2003; Choe et al., 2020). The hotel practitioners have experienced taking adjusted or new measures in order to tackle challenges due to infectious diseases. For example, hotels in Korea installed new hygiene equipment after the severe acute respiratory syndrome outbreak (SARS-CoV) (Kim et al., 2005). Nonetheless, there are limited attempts that inquire into how customers appreciate these new measures and the effectiveness of these types of practices. In addition, Gursoy and Chi (2020) addressed the urgent need of research in regards to consumer behavior in order to guide the hospitality operations in the COVID-19 environment. The present study successfully fills the need in academia for the examination of the importance-performance of hotel selection attributes and the observation of associations among the hotel attributes, the overall image of a hotel, and the intentions to revisit the hotel, which are also supported by the complexity theory. Likewise, it provides the evidence of how effectively the hotel selection attributes, which include the new measures against COVID-19, are perceived and how the customers' return intentions are formulated in response.

5.3. Managerial implications

First, it is suggested that hoteliers maximize their efforts in order to

offer a critical level of precautionary measures against COVID-19 throughout a hotel. The findings regarding the new set of hotel selection attributes due to COVID-19 and the changes of importance of each of the hotel selection attributes provide the insights for the hotel professionals to establish an effective strategy to appeal to the consumers. Likewise, following the rules and recommendations from the authorities should be treated as a *must-do*. Partnerships with experts in cleanliness and hygiene and embracing innovative technologies would be possible solutions by consulting the current manuals and striving for the highest standards. In regards to the social servicecape, hotels should require more signage and strict discipline in order to ensure that the customers uphold the rules.

Do hotels have the resilience to bounce back from the COVID-19 pandemic in the very near future? According to the World Health Organization, even though the world began to see some light, coronavirus vaccines do not mean an end to COVID-19 (CNN, 2020). The positive readouts from the vaccine campaigns will most likely reach an epidemiological end to the pandemic in Q3 or Q4 of 2021, so the current practices, which include isolated cases, are said to remain in order to control the risk of COVID-19 (BBC, 2020). It is indeed uncertain when the hotels' performance will return to the 2019 level (PricewaterhouseCoopers, 2020), so the hotel practitioners should build an adaptive capacity for the case of the coronavirus disease as well as for the coming years and any unexpected catastrophes. The evaluation of these types of new measures should be made in order to learn what went well and what did not go well from the consumers' perspective. Therefore, it is suggested for the hotel practitioners to survey their customers to investigate the performance of the hotel attributes more frequently in order to assess the areas for improvement. Furthermore, these should be well documented for the preparation of any similar crisis that may occur in the future.

Finally, the practitioners in the hotel industry should conduct effective marketing activities to emphasize their efforts on the attributes regarding what the customer's appreciate to create a better image of the hotel in order to retain their customers. For example, the hotels may consider promoting their new practices to be seen as a standard for hygiene and cleanliness in the customers' own homes. Sharing the good examples of the practices in the hotels can be initiated as part of corporate social responsibility, which will create opportunities for indirect messages of the high performance of the hotel attributes under the COVID-19 environment. The hotels may run virtual coaching sessions that provide people with the possible practices at their own homes as the hotels adopt hospital hygiene standards. Moreover, these activities may include the hotel employees as a component of the internal marketing initiatives.

6. Limitations and future research

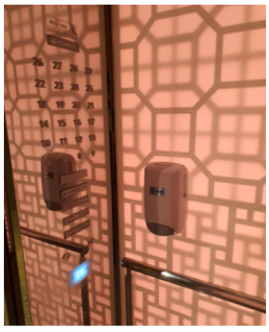
The perception and evaluation of the hotel attributes depend on the hotel guests' country of origin (Francesco and Roberta, 2019; Kim et al., 2019). Furthermore, all countries pursue a COVID-19 elimination strategy but with different level of restrictions. Also, how people are affected by these new regulations possibly varies considerably (Filimonau et al., 2020; Hao et al., 2020). The current study centered on the local customers' perception and evaluation of the hotel selection attributes within South Korea, and the findings may be difficult to generalize as a result. Hence, the future studies are suggested to consider different customer segments and hotel types in other regions in order to learn the differences, identify extra core attributes and be better prepared for unexpected phenomena. In addition, this study depends on the individuals' self-administrated responses pre-COVID-19 and post-COVID-19. This may be critical to conduct a longitudinal analysis in order to validate our results in the future research. Lastly, studies in future may incorporate the higher order constructs, such as trust, assurance, and reliability, which might be highly relevant in the pandemic age.

Appendix A. Precautionary measures in place in the hotels captured during the site visits and interviews

Thermal scanners in the main entrance

Social distancing operating signage

Sanitized pen at the front desk



Hand sanitation device in the elevator

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Sanitizer and sanitized pen at the front desk

Signage for wearing a facial mask

Air purifier that suppress virus

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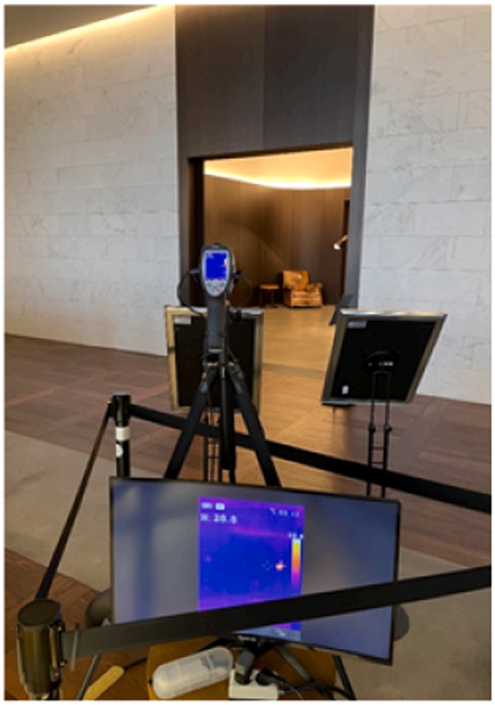
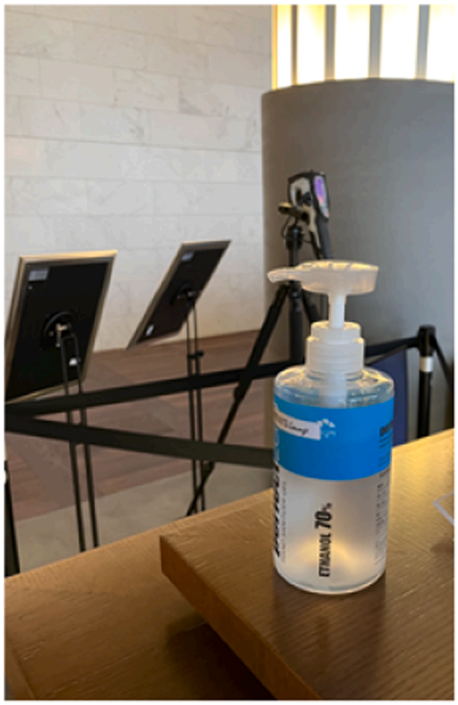


Thermal scanners in the main entrance



Hand sanitizing stations throughout the hotel

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On-site visit to Andaz Seoul Gangnam under Hyatt Hotels Corporation **(A2)** On-site visit to Hilton Busan under Hilton Worldwide **(A3)**.

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