A Study on the Image Color Analysis of Hotel Guest Rooms for User-Focusing on the Image of Hotel Reservation App

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Abstract: An increase in the number of elderly persons in the population has resulted in an increase in the number of facilities for the elderly. Of such facilities, senior citizen centers that provide exclusive spaces for the elderly constitute the largest portion of facilities for the elderly. In light of recent social developments, the demand for qualitative improvements regarding facilities for the elderly has been growing. Despite this, studies associated with this issue are currently lacking. Especially in consideration of the direct effects that color environments found in elderly facilities have on the psychology of the elderly, much care must be taken when planning colors. In light of the above, this study undertook further analysis of the color environments of senior citizen centers for the purpose of collating basic research material regarding the color plans of such facilities in the future. In doing so, the following conclusions were reached in this study. Studies on the color environment of senior citizen centers revealed the distribution of Y and YR series colors to account for over half of the colors which indicated a further need to apply warm color series colors capable of promoting a sense of stability and vigor among the elderly. In the case of senior citizen centers, the use of G series colors that promote the psychological stability of the elderly was rarely found. Senior citizen centers often include furniture of widely varying colors which present difficulties in developing appropriate color plans. In light of the above, appropriate color planning that takes into consideration such factors and aspects must be undertaken.

Key words: The elderly, senior citizen centers, color preference, color environment, guidelines, color plans

INTRODUCTION

Due to recent developments regarding the Internet, the use of smart devices has become highly popularized. According to a report from Strategic Analytics (SA), the supply rate of smartphones in South Korea has reached 7.7% making South Korea 6th in terms of world rankings. SA also estimated that approximately 3.8 million people out of South Korea's population of 50 million are smartphone users. These trends have resulted in a number of changes across society. Accordingly, people's lifestyles are also changing and various activities that once required an offline presence such as leisure activities, messaging, health management, product purchasing and sales are being done through the simple touch of a smartphone. Such changes have affected the way hotel reservations are made compared to the past. In the past, hotel reservations were typically made by calling

travel agencies or the hotel or by actually going to the hotel itself. Today, however, the number of people making reservations through online websites or smartphone applications is on the rise. An analysis by Criteo undertaken, since, 2014 in which more than 1 billion online reservations made through online travel agencies and travel services companies were analyzed, indicated that most of the increases in travel reservations after 2014 were made in the mobile sector. Mobile reservations increased from 12% in the second half of 2014 to 23% in the second half of 2015 which is almost a twofold increase. In the case of same-day reservations of hotel rooms, the ratio of reservations through smartphones was found to be 47% (58% when including tablets) which was considered a high (Fig. 1). The method of making hotel reservations using smartphones includes a process whereby conditions such as check-in dates, check-out dates and region are first selected. Thereafter, matching hotel images

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and prices are presented, users select a hotel of their choice and reservations are made upon payment. In light of this, the image of hotel rooms presented in the process of making reservations via. smartphone applications is an important factor in the selection process. The images of hotels featured during this process are significant in that they are continually provided with stimulations based on large amount of information and are likely to have an effect on the perceptions formed on the basis of individual values, experiences, desires and knowledge. Because of this, the images of hotels are extremely important in that they have great marketing potential. However, applications for hotel reservations are limited in that they simply provide information. In addition to this, studies regarding the color trends used in the images of applications are largely lacking. Due to the generational shifts and cultural factors that affect hotels and result in the continued and regular remodeling of rooms, there exists a continued need to study the continual changes regarding the trend of colors of indoor spaces. Accordingly, this study undertook an analysis regarding trends in relation to "colors" and "IRI color images" presented in the images of hotel rooms in mobile applications used by users making hotel reservations with smart devices.

The purpose of this study was to develop basic research material that can be further applied to the management and provision of images regarding hotels.

1 step: theoretical review
Hotel concept and spatial composition Important factor for selecting hotels Spatial color image

2 step: selection of analysis subject
Summary of analysis subject Five-star hotel in Seoul Top 8 ranked hotels in the application Hotels opened or remodeled after the year 2000

3 step: analysis
Room image color analysis (I.R.I image scale) Room image adjective analysis

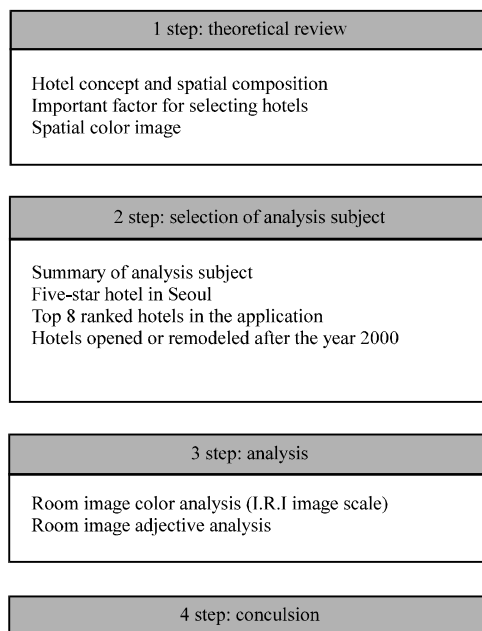| 4 step: conculsion |
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Fig. 1: Research flow

MATERIALS AND METHODS

Research method and scope: This study undertook an analysis of the spatial color trends of hotel rooms found in smartphone hotel reservation applications and was conducted via. the following steps. First, as part of the process of reviewing relevant reference materials, studies regarding the general concepts of hotels and the spatial images of hotels were studied to understand the factors involved in hotel compositions and spatial images as well as the selection process of a hotel. Second, as a means of undertaking on-site survey activities, images of the 8 highest ranking hotels on Hotels.com, the No. 1 ranking hotel reservation application in the App Store that were available for reservations were studied in terms of their spatial images and applications of color compositions. Third, using the collected data, the appropriate image vocabulary of the color compositions of each of the images was extracted and further analysis of the spatial color compositions of the space was conducted. These undertakings were based on the results of previous studies in which the images customers have of rooms of hotels were regarded as an important selection factor (Kim and Park, 2015).

The concept and composition of the hotels: Although, the concept of a hotel may differ from country to country, it generally refers to a facility in which a comprehensive range of services that includes a bed and dining amenities are provided in return for a fee. The National Language Institute of Korean Language defines a hotel as a "large sized luxury lodging facility that is equipped with elegant facilities". According to the Tourism Promotion Act, the hotel business is defined as, "the business of operating facilities suitable for the accommodation of tourists". To provide such services to customers as shown in Table 1, a hotel is divided into public spaces such as a lobby, ball room, wedding hall, fitness center, restaurant and lounge and private areas such as guest rooms (Lee and Ha, 2008). The subject of analysis in this study was the guest rooms of hotels which can be regarded as a place of temporary residence used by a customer during their stay at a hotel in which certain aspects associated with a residential space including comfort, pleasure, cleanliness, convenience, privacy and tranquility are of importance.

Table 1: Hotel configuration and function

Department	Classification	Function
Public space	Lobby, ball room, wedding hall, fitness center, restaurant, lounge	Transfer function, rest function, beverage and dining function, welcoming function
Private space	Guest room	Resting function, privacy function

Factors considered of importance for the selection of hotels: There are several factors that are particularly important in the selection of hotels. According to past research, the factors related to the selection of hotels include comfort levels of guest rooms, decorations of facilities and interior designs (Weaver *et al.*, 1993). In addition to service and convenience it was found that the images of the guest rooms themselves were an important factor in selecting hotels. According to a study by Kim and Park (2015) in which the correlation of indoor design elements included in hotel guest room images posted on hotel web sites that people had an intention to visit was studied, the aesthetic appeal of colors, appropriateness of lighting, balance of spatial arrangements and the aesthetic appeal of the furniture and decorations were found to be elements that affected selections (Kim and Park, 2015). In addition, in surveys asking whether the images of guest rooms posted on hotel websites were deemed to be important reference factors in the selection of hotels it was revealed that 84.8% of visitors considered the images of hotels provided on hotel websites to be an important factor in selecting hotels. As is the case with these results, the reservation of hotel rooms using smartphone applications is also expected to show that a great deal of importance is placed on the images of hotel guest rooms during the selection process (Fig. 2).

Spatial color image: Color is the largest and strongest visual element of an indoor space (Eiseman, 1998). Color directly affects the perception of users who first enter a space. This is due to the fact that the general atmosphere of a space is perceived by users of the space based on the mood, behavior and behavioral patterns of the users (Lee and Hong, 1988). In addition, according to Song (2013) who undertook a study regarding the characteristics of colors from an environment psychology point of view it was found that people most strongly responded to visual stimuli during the process of acquiring information and that during this process, the strongest element that triggered visual and emotional responses was determined to be color (Song, 2013). In addition to this, one of the strongest factors influencing the image of a space is color. Hotels are part of the service industry. This is evidenced in the fact that hotels provide various customers with lodging services in addition to a number of other high-quality services. In order to gain the trust of customers while providing such services, hotels need to project a classy and tranquil image (Gwak, 2013). In this study, to assess the color images of guest room images presented in hotel reservation applications, an IRI image scale was used. Based on the emotional criteria of
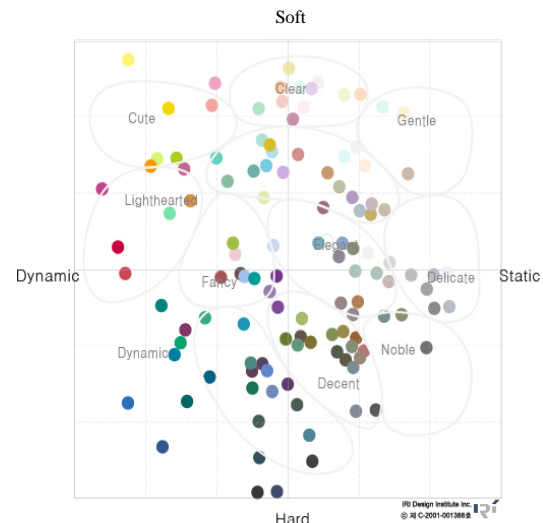

Fig. 2: IRI color image scale

Koreans, the IRI image scale includes 12 representative adjectives and 105 adjectives forming subcategories of each of the adjectives. This indicates that it is possible to interpret an abstract image with specific colors due to each single color, mixture of colors and adjectives having a place within a space and also that it is possible to interpret specific colors by changing them into abstract images (Kim and Kim, 2016). The colors of the walls, floors and ceiling of the images of the 8 hotels selected from the hotel reservation application for further analysis in this study were converted to a Munsell system. Thereafter, IRI color images were extracted.

RESULTS AND DISCUSSION

Selection of subjects of analysis and analysis results
Selection of subjects of analysis: The subjects of analysis in this study as shown in Table 2, involved 8 subjects. The subjects were selected using Hotels.com, the No. 1 ranking hotel reservation application from the App. Store during the month of August in 2013 and the top 8 ranking five-star hotels in Seoul were selected as the subjects. The reason for selecting hotels in the city of Seoul was due to the fact that a big data analysis regarding the reservation trends of the 2017 summer peak season revealed that hotel reservations in Seoul accounted for 64% of the entire country. Also, in light of this study being undertaken to analyze trends regarding spatial color images, only those hotels that were opened or were remodeled after the year 2000 were selected as the subjects of analysis. A summary of the analysis subjects is shown in Table 2.

Table 2: Outline of analysis target

Names	Images	Years	Location	Size
JW Marriot Hotel Seoul (A)		2000	Seoul Jung-gu Soweol-ro 50	34 Floors No. of rooms: 497
Lotte Hotel Seoul (B)		2009	Seoul Jung-gu Eulji-ro 30	38 Floors No. of rooms: 1,120
Signiel Seoul (C)		2017	Seoul Songpa-gu Olympic-ro 300	Floors 76-101 No. of rooms: 235
Four Seasons Seoul (D)		2015	Seoul Jongro-gu Saemunan-ro 97	29 Floors No. of rooms: 317
Seoul Westin Chosun Hotel (E)		2014 (Remodeled)	Seoul Jung-gu Sogong-ro 106	20 Floors No. of rooms: 456
The Plaza Seoul (F)		2010 (Remodeled)	Seoul Jung-gu Sogong-ro 119	22 Floors No. of rooms: 410
Grand Hyatt Seoul (G)		2009 (Remodeled)	Seoul Yongsan-gu Soweol-ro 322	20 Floors No. of rooms: 601
Banyan Tree Club and Spa Seoul (H)		2010	Seoul Jung-gu Jangchungdan-ro 60	19 Floors No. of rooms: 50

Color analysis results of the hotel reservation application hotel guest room images: The color measurements and data collected to analyze image trends of hotel guest room images found in hotel reservation applications are shown in Table 3 and 4.

The spatial domains perceived by users upon making hotel reservations were divided into the most basic elements of a space which included the walls, floor and ceiling. After this the colors of each domain were extracted. The results of analyzing the colors of the hotels are as follows. First, the walls and ceilings of hotel A were found to be based on Y series colors and floors were found to be based on GY series colors. The walls presented a contrast of 4.51 and saturation of 2.23 which indicated medium contrast and low saturation. The floor presented a contrast of 8.80 and saturation of 1.98 which indicated high contrast and low saturation. The ceiling presented a contrast of 4.51 and saturation of 2.33 which indicated medium contrast and low saturation. Overall, hotel A in general was found to use Y series medium contrast and low saturation colors. Second, the walls and ceilings of hotel B were found to be based on Y series colors and floors were found to be based on YR series colors. The walls presented a contrast of 4.52 and saturation of 6.56 which indicated medium contrast and medium saturation. The floor presented a contrast of

Table 3: Image color status of hotels guest rooms-1

Hotel guest room image

No.	Hotel A	Hotel B	Hotel C	Hotel D
Classification image	Superior room	Superior double room	Deluxe room	Club room
Wall	H: 3.20Y/V: 4.51/C: 2.33	H: 1.67Y /V: 4.52C: 6.56	H: 1.92G/V: 6.65/C: 1.87	H: 1.06GY/V: 6.64/C: 1.63
Floor	H: 9.62GY/V: 880/C: 1.98	H: 6.66YR/V: 4.51/C: 2.33	H: 6.07Y/V: 5.57/C: 1.38	H: 2.04PB/V: 4.53/C: 3.36
Ceiling	H: 3.20Y/V: 4.51/C: 2.33	H: 3.89Y/V: 5.57/C: 4.53	H: 4.71GY/V: 7.73/C: 1.85	H: 5.33Y/V: 6.66/C: 2.46
Composition				

Table 4: Image color status of hotels guest rooms-2

No.	Hotel E	Hotel F	Hotel G	Hotel H
Classification image	Deluxe twin room	Deluxe room	Grand room	Namsan pool suite
Wall	H: 8.70YR/V: 4.51/C: 4.51	H: 2.33YR/V: 6.64/C: 1.20	H: 7.99YR/V: 5.56/C: 4.37	H: 2.11Y/V: 2.02/C: 1.96
Floor	H: 9.39YR/V: 2.54/C: 4.32	H: 6.21GY/V: 1.27/C: 0.38	H: 0.02Y/V: 4.43/C: 4.34	H: 3.12Y/V: 5.44/C: 3.27
Ceiling	H: 7.99YR/V: 5.56/C: 4.37	H: 5.37G/V: 8.65/C: 0.71	H: 5.36Y/V: 7.80/C: 2.25	H: 4.11GY/V: 8.43/C: 1.12
Composition				

-4.51 and saturation of 2.33 which indicated medium contrast and low saturation. The ceiling presented a contrast of 5.57 and saturation of 4.53 which indicated medium contrast and medium saturation. Overall, hotel B in general was found to use Y series medium contrast and medium saturation colors. Third, hotel C presented the use of G, Y and GY series colors. The walls presented a contrast of 6.65 and saturation of 1.87 which indicated medium contrast and low saturation. The floor presented a contrast of 5.57 and saturation of 1.38 which indicated medium contrast and low saturation. The ceiling presented a contrast of 7.73 and saturation of 1.85 which indicated high contrast and low saturation. Overall, hotel C in general was found to use G and Y series medium contrast and low saturation colors. Fourth, hotel D presented the use of GY, PB and Y series colors. The walls prsented a contrast of 6.64 and saturation of 1.63 which indicated medium contrast and low saturation. The floor presented a contrast of 4.53 and saturation of 3.36 which indicated medium contrast and low saturation. The ceiling presented a contrast of 6.66 and saturation of 2.46 which indicated medium contrast and low saturation. Overall, hotel D in general was found to use GY, PB and Y series medium contrast and low saturation colors. In the case of Hotel E, the walls, floor and ceiling all presented the use of YR series colors. The walls presented a contrast of 4.51 and saturation of 4.51 which indicated medium contrast and medium saturation. The floor presented a contrast of

2.54 and saturation of 4.32 which indicated low contrast and medium saturation. The ceiling presented a contrast of 5.56 and saturation of 4.37 which indicated medium contrast and medium saturation. The fifth subject, hotel E, was found to use YR series medium contrast and medium saturation colors. Sixth, hotel F presented the use of YR, GY and G serious colors. The walls presented a contrast of 6.64 and saturation of 1.20 which indicated medium contrast and low saturation. The floor presented a contrast of 1.27 and saturation of 0.38 which indicated low contrast and low saturation. The ceiling presented a contrast of 5.37 and saturation of 0.17 which indicated high contrast and low saturation. Hotel F presented the use of YR, GY and G series colors that were based on a variety of contrasts and low saturation. The results of organizing the hotel reservation application guest room image color usage rates are shown in Fig. 3. With regard to the hues, the walls were found to present Y series (37.5%), G series(12.5%), GY series(12.5%) and YR series (37.5%) colors in which the use of Y and YR series colors were found to be the most prevalent. In the case of the floors, Y series (50%), G series (12.5%), GY series (25%) and YR series (12.5%) colors were found to be present in which the uses of Y series colors were found to be the ost prevalent. With regard to the ceilings, Y series (62.5%), G series(12.5%), GY series (12.5%) and YR series (12.5%) colors were found to be present in which the use of Y series colors was found to be the most prevalent. Upon
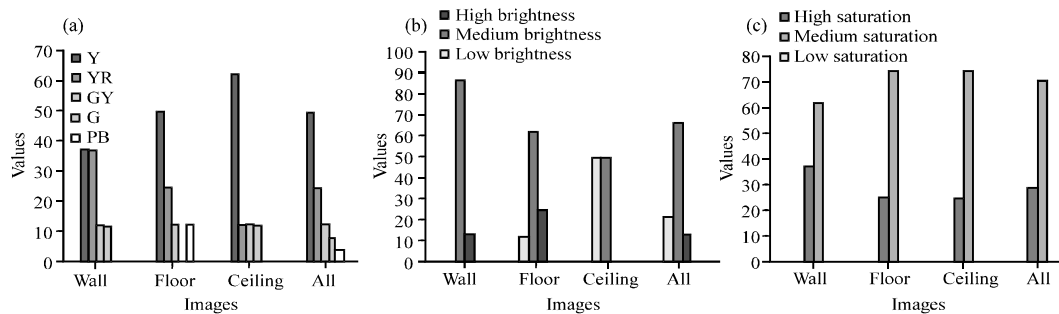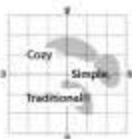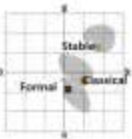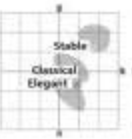
Fig. 3: Hotel room image color usage rate: a) Colour; b) Brightness and c) Saturation

summarizing the use of colors for the walls, floors and ceilings, the use of Y series (50%), G series (8.3%), GY series (12.5%), YR series (25%) and PB series (4.1%) colors were found to be present in which the use of Y color series was most prevalent and the use of YR series colors was the second most prevalent thereafter. With regard to contrast, the walls presented medium contrast (87.5%) and low contrast (12.5%) characteristics in which medium contrasts were mainly present. The floors presented high contrast (12.5%), medium contrast (62.5%) and low contrast (25%) characteristics in which medium contrasts were most prevalent. The ce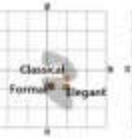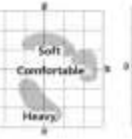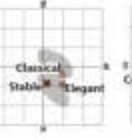ilings presented high contrast (50%) and medium contrast (50%) characteristics in which the proportion of high and medium contrast was the same. The walls, floors, ceilings combined presented high contrast (20.8%), medium contrast (66.6%) and low contrast (12.5%) characteristics in which medium contrasts were most prevalent. With regard to saturation, the walls presented medium saturation (37.5%) and low saturation (62.5%) characteristics in which low saturations were most prevalent. The floors presented medium saturation (25%) and low saturation (75%) characteristics in which low saturations were most prevalent. The ceilings presented medium saturation (25%) and low saturation (75%) characteristics in which low saturations were most prevalent. The walls, floors and ceilings combined presented medium saturation (29.1%) and low saturation (70.8%) characteristics in which low saturations were most prevalent. In summary, the colors used in the guest room images of hotel reservation applications mostly tended to be Y series and YR series colors. Contrasts in most cases were medium contrast and saturations were mostly low saturation.

The spatial domains perceived by users upon making hotel reservations were divided into the most basic elements of a space which included the walls, floor and ceiling. After this the colors of each domain were extracted. The results of analyzing the colors of the hotels

are as follows. First, the walls and ceilings of hotel A were found to be based on Y series colors and floors were found to be based on GY series colors. The walls presented a contrast of 4.51 and saturation of 2.23 which indicated medium contrast and low saturation. The floor presented a contrast of 8.80 and saturation of 1.98 which indicated high contrast and low saturation. The ceiling presented a contrast of 4.51 and saturation of 2.33 which indicated medium contrast and low saturation. Overall, hotel A in general was found to use Y series medium contrast and low saturation colors. Second, the walls and ceilings of hotel B were found to be based on Y series colors and floors were found to be based on YR series colors. The walls presented a contrast of 4.52 and saturation of 6.56 which indicated medium contrast and medium saturation. The floor presented a contrast of 4.51 and saturation of 2.33 which indicated medium contrast and low saturation. The ceiling presented a contrast of 5.57 and saturation of 4.53 which indicated medium contrast and medium saturation. Overall, hotel B in general was found to use Y series medium contrast and medium saturation colors. Third, hotel C presented the use of G, Y and GY series colors. The walls presented a contrast of 6.65 and saturation of 1.87 which indicated medium contrast and low saturation. The floor presented a contrast of 5.57 and saturation of 1.38 which indicated medium contrast and low saturation. The ceiling presented a contrast of 7.73 and saturation of 1.85 which indicated high contrast and low saturation. Overall, hotel C in general was found to use G and Y series medium contrast and low saturation colors. Fourth, hotel D presented the use of GY, PB and Y series colors. The walls prsented a contrast of 6.64 and saturation of 1.63 which indicated medium contrast and low saturation. The floor presented a contrast of 4.53 and saturation of 3.36 which indicated medium contrast and low saturation. The ceiling presented a contrast of 6.66 and saturation of 2.46 which indicated medium contrast and low saturation. Overall, hotel D in general was found to use GY, PB and Y series

Table 5: Image of hotel reservation app IRI image scale

No.	Hotel A	Hotel B	Hotel C	Hotel D	Hotel E	Hotel F	Hotel G	Hotel H
IRI								
Image vocabulary	Traditional, Cozy, Simple	Classical, Formal, Stable	Classical, Elegant, Stable	Simple, Urban, Stable	Elegant, Formal, Classical	Comfortable, Heavy, Soft	Classical, Elegant, Stable	Formal, Elegant, Comfortable

medium contrast and low saturation colors. In the case of hotel E, the walls, floor and ceiling all presented the use of YR series colors. The walls presented a contrast of 4.51 and saturation of 4.51 which indicated medium contrast and medium saturation. The floor presented a contrast of 2.54 and saturation of 4.32 which indicated low contrast and medium saturation. The ceiling presented a contrast of 5.56 and saturation of 4.37 which indicated medium contrast and medium saturation. The fifth subject, hotel E, was found to use YR series medium contrast and medium saturation colors. Sixth, hotel F presented the use of YR, GY and G serious colors. The walls presented a contrast of 6.64 and saturation of 1.20 which indicated medium contrast and low saturation. The floor presented a contrast of 1.27 and saturation of 0.38 which indicated low contrast and low saturation. The ceiling presented a contrast of 5.37 and saturation of 0.17 which indicated high contrast and low saturation. Hotel F presented the use of YR, GY and G series colors that were based on a variety of contrasts and low saturation. The results of organizing the hotel reservation application guest room image color usage rates are shown in Fig. 3. With regard to the hues, the walls were found to present Y series (37.5%), G series (12.5%), GY series (12.5%) and YR series (37.5%) colors in which the use of Y and YR series colors were found to be the most prevalent. In the case of the floors, Y series (50%), G series (12.5%), GY series (25%) and YR series (12.5%) colors were found to be present in which the uses of Y series colors were found to be the ost prevalent. With regard to the ceilings, Y series (62.5%), G series (12.5%), GY series (12.5%) and YR series (12.5%) colors were found to be present in which the use of Y series colors was found to be the most prevalent. Upon summarizing the use of colors for the walls, floors and ceilings, the use of Y series (50%), G series (8.3%), GY series (12.5%), YR series (25%) and PB series (4.1%) colors were found to be present in which the use of Y color series was most prevalent and the use of YR series colors was the second most prevalent thereafter. With regard to contrast, the walls presented medium contrast (87.5%) and low contrast (12.5%) characteristics in which medium contrasts were mainly present. The floors presented high contrast (12.5%), medium contrast (62.5%)

and low contrast (25%) characteristics in which medium contrasts were most prevalent. The ceilings presented high contrast (50%) and medium contrast (50%) characteristics in which the proportion of high and medium contrast was the same. The walls, floors, ceilings combined presented high contrast (20.8%), medium contrast (66.6%) and low contrast (12.5%) characteristics in which medium contrasts were most prevalent. With regard to saturation, the walls presented medium saturation (37.5%) and low saturation (62.5%) characteristics in which low saturations were most prevalent. The floors presented medium saturation (25%) and low saturation (75%) characteristics in which low saturations were most prevalent. The ceilings presented medium saturation (25%) and low saturation (75%) characteristics in which low saturations were most prevalent. The walls, floors and ceilings combined presented medium saturation (29.1%) and low saturation (70.8%) characteristics in which low saturations were most prevalent. In summary, the colors used in the guest room images of hotel reservation applications mostly tended to be Y series and YR series colors. Contrasts in most cases were medium contrast and saturations were mostly low saturation.

Discussion of the image adjective analysis of the guest room images of the hotel reservation application: Based on the extracted color data an IRI image scale was applied to extract image adjectives (Table 5).

In the case of the walls, the word "classical" accounted for 37.5% of the result and had the highest proportion of use among all words. Thereafter the words, "traditional, simple, elegant, comforting and formal" were each extracted and each accounted for 12.5% of the result. In the case of the floors, the word "elegant" constituted 37.5% of the result and had the highest proportion of use among all words. This was followed by "formal" constituting 25% as well as "comforting, urban and heavy" which each constituted 15.5%. In the case of the ceiling, the word "stable" was found to constitute 50% of the total with "simple, classical, soft and comfortable" each constituting 12.5% thereafter. When considering the walls, floors and ceilings combined, the words, "classical,

elegant and stable" were each found to constitute 16.6% of the total. Thereafter the words, "formal" was found to constitute 12.5% of the total, "comfortable" was found to constitute 8.3% of the total and "traditional, cozy, simple, urban, heavy and soft" were each found to constitute 4.1% of the total. The reason behind such results is thought to be due to the fact that hotels are part of the service industry. This is evidenced by the fact that hotels provide various customers with lodging services in addition to a number of other high-quality services. In order to gain the trust of customers while providing such services, hotels need to project a classy and tranquil image. Colors are an important factor that determines the image of spaces. The above colors were considered to have been used in rooms that customers stayed in for long periods of time as a way for hotels to promote a high-class image that presents a sense of tranquility and stability to its customers. Based on such findings, further color planning according to the image that a particular hotel wants to project about itself is considered essential when planning the colors of hotel rooms (Lim *et al.*, 2017).

CONCLUSION

This study undertook an analysis regarding the trends for "colors" and "IRI color images" presented in the images of hotel rooms in mobile applications used by users making hotel reservations with smart devices. The purpose of this study was to develop basic research material that can be further applied to the management and provision of images in relation to hotels. In doing so, the following conclusions were reached.

First, despite there being differences in the color trends of hotel reservation application images it was found that in general, Y series (50%) and YR series (25%) colors were most prevalent, medium contrast (66.6%) was most prevalent and low saturation (70.8%) was most prevalent.

Second, the most popular trending adjectives regarding the hotel rooms in the applications included, "classical, elegant and stable" in which each word constituted 16.6% of the total result for adjectives. The hotel reservation application guest room images of five-star hotels in Seoul were found to mostly colors that suggested elegant, stability and a classical style. The reason behind such image adjective extractions was considered to be associated with the use of colors to form a tranquil, reliable and a high-class image for hotels.

LIMITATIONS

Despite this study having significance in that it analyzed the color trends associated with guest room images of hotels presented in reservation applications, it is limited in that it did not include an analysis of other hotel spaces such as the lobby or restaurants.

RECOMMENDATIONS

The undertaking of further studies in the future to improve upon such limitations is expected to result in valuable basic research material that can be applied to the management of the images of hotels.

ACKNOWLEDGEMENT

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