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Environmental Sustainability on Tourist Hotels' Image Development

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Abstract: Previous studies are lacking that explore the added values of sustainable practices perceived by consumers. To achieve a balanced development of economy and environmental protection, tourist hotels should develop a service differentiation strategy based on the sustainable practices. By examining the environmental characteristics and performing art in marketing images of a tourist hotel that are attractive to customers, this study built on the attention restoration theory and triple-bottom-line perspective, and employed the eye-tracking analysis technique to investigate the effect of image characteristics on customers' visual attention. Sixty-three individuals participated in the experiment and observed the performing arts images. This study confirmed that, first, a natural image could attract more of customers' visual attention than a built image. In particular, the coupling of nature and performing arts can get the most visual attention from customers. Second, older adults prefer natural images, but younger adults do not. However, there is no significant difference in the impact of gender on the customer's visual attention. Those findings imply that tourist hotels should use the marketing image design to highlight the value-added services derived from environmental protection.

Keywords: eye-tracking analysis; natural image; built image; performing art; attention restoration theory; triple bottom line

1. Introduction

Sustainability is one of the key factors influencing customer perception, decision making [1], satisfaction, loyalty, and willingness to pay [2,3], because customers pay more attention to environmentally friendly characteristics of products and services [4]. Research in the green hotel sector also confirms that sustainability can help hotels build a good image [5], enhance guest satisfaction, stimulate consumer behavioral intentions to stay at hotels [1,2,5], and even increase consumers' willingness to pay extra premiums [2]. However, current research in the field of sustainability is still insufficient for research on how hotels develop green positioning strategies to capture target market segments [5]. The triple-bottom-line perspective is often used to explore how sustainable activities promote balanced development of environmental, social, and economic aspects. Environmental

dimensions focus on reducing the negative impact of operations on the environment. Economic dimensions focus on how hotels should generate and maintain long-term benefits when hotels have a negative impact on the environment [6,7]. To fill the gap between the sustainability activities and the marketing image, this study is based on the triple-bottom-line perspective to explore the contribution of sustainable development to the green positioning strategy and image of tourist hotels.

Travelers expect to relieve stress and feel pleasure through the services provided by tourist hotels [8,9]. This expectation will lead them to search for hotels on the Internet to find tourist hotels that meet their needs. Intangible services require tangible clues to allow consumers to judge the choice of accommodation [10]. To design promotional advertisements that resonate with individuals, hotels might use performance art [11] and environmental characteristic [12] elements in images to capture their visual attention and even evoke their willingness to get an accommodation [13,14].

Attention restoration theory believes that observing the natural environment will make people feel relaxed and recover their attention [15]. Previous studies have also found that enjoying beautiful and traditional cultural performances in the natural environment can make travelers have memorable experiences (i.e., [11]). However, many tourist hotels provide performing arts to customers in the built environment, and this image is used as a material for hotel marketing. Furthermore, the performing arts should be based on the natural or built environment. This topic has not yet received the attention of experiential marketing research. The research gap in the experiential marketing research needs more researchers to explore it. Therefore, the current study aimed to compare whether the natural or built environment as the backdrop of performing arts attracts more of the customers' visual attention in the tourist hotel context.

To design a marketing picture successfully, it is important to understand the way that predispositions affect the interpretation of messages conveyed by the images [16,17]. In the field of hotel management, researchers believe that the impact of two elements, namely, gender [18,19] and age [10,20], on customers' interpretation of messages conveyed by the images is worth further investigation, most especially because these two predispositions are easily observed, clear, and identifiable characteristics for any company. However, the influence of customer demographics on image preferences and responses has rarely been examined by previous hotel studies [18,21,22]. Thus, there is a big gap between academics and industry in hotel design and management [23,24].

The eyes do not lie. Eye-tracking analysis is an effective tool to understand the response of customers' visual attention to marketing images [9], and to solve the research gap in the sustainability research. The eye-tracking technology can be used to analyze customers' visual attention toward certain target objects [10], and helps to shorten the gap between hotel industry and academic research. It has proven effective in revealing customers' visual attention to hotels' advertisements [13,20]. Therefore, Robson and Noone (2014) [25] strongly recommended that future research in the hospitality industry use eye-tracking technology to objectively explore the relationship between customer eye movements and their behavioral decisions. Thus, the current study used eye-tracking technology to verify elements within the marketing pictures that might affect customers' visual attention.

In the field of sustainability research, there is not enough discussion about using green activities to enhance the added value of services [5]. Moreover, Kucukusta et al. [26] found that four-star and five-star hotel customers are more concerned with environmental-related operational activities than corporate activities related to policy, mission, and vision, because daily operational activities are more likely to affect service delivery, which in turn affects the overall experience. Therefore, sustainability activities may directly affect the experience and added value that customers receive on their journeys.

To explore the impact of the hotel's daily sustainability activities on improving service images and added value, the purpose of this study is to explore the impact of environmental cues in marketing imagery on consumer visual attention, and examine how customers' personal predispositions (gender and age) play roles in the relationships between the marketing pictures and visual attention. The paper is organized as follows. In the following section, the theoretical background regarding the variables used in the research framework is presented and the hypotheses are developed. Detailed

information on sampling, eye-tracking research processes, and analysis method is presented in the methods section. The results are discussed in detail in the discussion section. The conclusion section presents the conclusions and the theoretical and managerial implications. The final section presents the limitations and future research suggestions.

2. Literature Review

2.1. Hotel Marketing Images and Customer Visual Attention

Image is the communication channel between hotels and consumers. Through the design of the image, the hotel can highlight the added value of environmental protection. Moreover, triple-bottom-line perspective believes that hotel green activities can enhance visit intention by improving reputation and brand differentiation [27,28]. When customers consider that the sustainability behavior of a hotel is a value-adding service that can bring a memorable experience to them, they may be willing to pay a premium [2].

The hotel's service is based on experience and intangibility. Buying accommodation services products is risky because individuals must make decisions based on images of service products [12]. Thus, the marketing manager relies heavily on images to communicate with the customers. If the picture features allow the observer to experience significant visual stimuli, the observer can generate visual attention [9,29].

Visual attention is defined as the allocation of certain stimulus-information-processing abilities [30] and is used to describe an individual's selective behavior of seeing in the environment [12,31]. Visual attention is a selective process that assigns limited mental capabilities to certain aspects of the visual environment while ignoring others [32], and lets the observer's attention shift from the entire image to the most significant or most interesting position [31].

2.2. Attention and Eye-Tracking Technology

The eye-tracking technology can be used to collect information related to customers' eye movement [33]. Customers' eye movement plays an active role in their decision-making behaviors [34]. In eye-tracking analysis, "fixation" is a measurement suitable to describe customers' visual attention when observing images [35,36]. In particular, the "duration" and "count" of fixation are two parameters most suitable for describing customers' visual attention preference [33,37]. First, the longer the fixation duration, the more count is spent by individuals on deciphering the information or connecting internal and external representations [36,38]. Second, the higher the fixation count, the more attractive the information [36,37].

2.3. Natural Image with Performing Art

In the hospitality field, the natural and built environments reside at the opposite ends of the environment design spectrum. The natural image with performing art is defined as a picture of an artistic performance performed in the natural environment, for example, mountains and rivers, forests, and rich ecological environments.

Pictures with natural characteristics can evoke pleasant emotions in customers. In addition, designing an image using natural characteristics can shorten the distance and facilitate the interaction between individuals and nature [8], enhance the experience quality for the consumers [39], and help to relieve people's stress from daily life [9].

2.4. Built Image with Performing Art

The built picture is defined as a picture of an artistic performance performed in the hotel's indoor environment, for example, hall and corridor, highlighting local culture and history. Image characteristics such as art, culture, and history also play key roles in customers' experience [9,40]. In addition, by utilizing local cultural elements, the hotel can build an image with an experience of

local life-stylized services. Hotels with a local cultural lifestyle can provide an image to consumers that implies they can deepen customers' experience with local culture as well as enrich their cultural literacy [40], and in turn attract a diverse group of customers to stay at the hotel [9].

2.5. Impact of Image Characteristics on Customers' Visual Attention

According to attention restoration theory, nature can provide a respite for individuals' attention mechanism and help them rejuvenate, while at the same time evoking positive emotions (i.e., serenity and vitality) and reducing negative emotions (i.e., anger, sadness, and fatigue) [9,15,41]. The beautiful natural environment in a hotel's images provides an opportunity to evoke relaxing and soothing emotions from customers [10]. The empirical results of Engelke and Le Callet [31] show that there is indeed a close relationship between perceived interest and overt visual attention when individuals observe natural pictures. Therefore, taking nature as the background feature of performance art images may be able to capture the customer's visual attention [8,10]. The empirical results of Tyrväinen et al. [41] found that, relative to the built environment, the natural environment could restore travelers' physical and mental vitality, for example, relieving stress, restoring well-being, evoking positivity, and providing an emotional lift. Wang and Sparks [10] compared the images of natural and built environments for attractiveness of the travel destination pictures, and their empirical evidence found that images of the natural environment attracted more of customers' visual attention and were associated with a higher fixation count than images of the built environment. Thus, choosing images preferred by tourists can more accurately and effectively convey particular service messages [16,36]. Therefore, this study presents the following hypothesis:

Hypothesis 1. *The natural image with performing art attracts more of customers' visual attention than the built image.*

2.6. The Effect of Gender on Visual Attention

As documented in the literature on the gender predisposition, there is a difference between males and females in terms of their visual attention paid to hotels' marketing images, because they expect the value obtained from the hotel may not be the same [19,24]. The customer's assessment of the importance of the service will vary depending on gender [19,42].

Female customers are more emotional, and more attentive to how the environment affects their feelings. Moreover, they make travel decisions based on their feelings [11]. Because the natural environment will give female consumers a sense of relaxation [11], female consumers more easily immerse themselves in the relaxing ambience rendered by the natural environment as compared to male consumers, while male consumers pay more attention to the appearance and utility of a product [19]. They will not be easily affected by the natural environment, thus evoking a relaxed mood.

The natural images are less effective in attracting the visual attention of male customers. On the contrary, the natural environment in marketing images proves more attractive to female customers and can evoke a positive response from females. Thus, this study presents the following hypothesis:

Hypothesis 2. *Compared to males, females pay more visual attention to natural images with performing art.*

2.7. Effect of Age on Visual Attention

Customers of different ages share different criteria when making decisions on hotel reservations [20,43]. They may even feel differently about the same images. Previous studies suggest that age is an important exploratory factor among demographic variables [16]. Studies on the predisposition of age have shown that customers' visual attention vary with their age. Age also impacts the choice of hotel [10,20]. Many studies have also demonstrated the difference in visual

attention among young adults, mature adults, and the elderly (e.g., [44]). This phenomenon may be attributable to the fact that people's preference and what they like vary with their age, because the service and value that people pay attention to differ with their age. In general, older customers likely gravitate toward the landscape and serenity in nature, whereas younger customers prefer novelty and unique service experience [11,24]. For example, the study by Noone and Robson [20] found that older customers paid more attention to the area in the marketing images on the website which incorporated the surrounding natural environment.

In summary, older individuals respond more to the natural images and the nature images more likely evoke positive feelings in older individuals. Consequently, the natural image is more effective in attracting customers' visual attention. On the contrary, the younger the customers, the lower their visual attention to the natural images. Thus, this study presents the following hypothesis:

Hypothesis 3. *Older adults pay more visual attention to the natural image with performing art. Young adults pay more visual attention to the built image with performing art.*

Drawn from the literature review in the above, a research framework is formulated as in Figure 1.

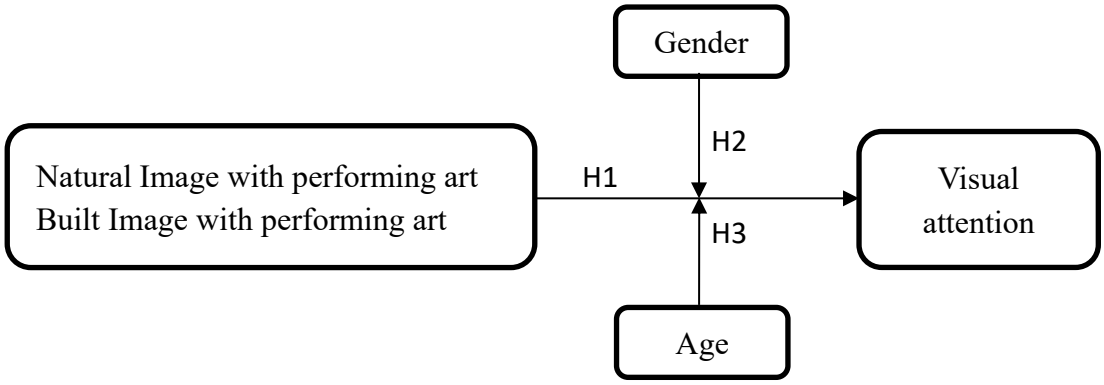


Figure 1. Research framework.

3. Methods

3.1. Sampling

This study used adult consumers who once lived in a four-star or five-star hotel as a sampling structure. The researchers contacted and invited the participants in the database of the Taichung Community Association in Taiwan through flyers or personal visits and a snowball technique to participate in the experiment. Community associations regularly organize tourism events to lead community residents to travel around Taiwan. Researchers combined these several recruitment methods to build a sample. The recruitment criteria for test participants for the current study included: first, normal visual acuity (or best corrected visual acuity) above 0.8 as a standard metric, to ensure accuracy in capturing eye movement data; second, male or female participants aged 22 years or older; third, mainly first-time visitors to the case hotel to avoid past experiences and memories affecting the participants' accurate judgment of the effectiveness of the advertisement.

This study included two groups of participants. Based on the power analysis principle, the minimum required sample size was 60 or higher [45]. Hence, a total of 80 test participants were recruited and randomly assigned to either of the two groups. Each group had a total of 40 participants. The total effective sample size was 63, after the removal of participants whose corrected visual acuity failed to reach 0.8 after the measurement, those whose eye-tracking data were missing, and those whose fixation duration was less than 200 ms [36]. The total effective sample size of this study was 63. The sample size of the natural image group was 32, and the sample size of the built image group was 31. The effective sample rate was 78.75%. Regarding the gender of the participants, 36 participants

were male (57.14%) and 27 participants were female (42.86%). Regarding the age of the participants, 35 participants were young adults (between 22 years and 49 years) (55.60%), with an average age of 32, and 28 participants were older adults (between 50 years and 75 years) (44.40%), with an average age of 63.45.

G*Power analysis was carried out to check whether the sample was sufficient for the validation of the study hypotheses. Results of G*Power analysis showed that the study had 95% power to detect small effects (d = 0.09) at the 5% significance level between groups on visual attention. The G*Power analysis results showed that the sample size of this study was adequate for examining the hypotheses.

3.2. Stimulus

The stimulus for this research was a range of Volando's (Volando Urai Spring Spa & Resort) hotel advertising picture images of artistic performances. Velando's performing arts are rich in local flair. Through performing arts, Volando presents the lifestyle of the aboriginal people to international travelers. A total of 8 photographic images were used in the study (Appendix A). A sample of 5 "customers" and 2 "hotel managers" and 5 "tourism scholars" evaluated each image on five-point scales for environment (from natural to built). Therefore, these pictures are divided into natural environment and built environment. Natural environment pictures, with mountains and rivers as the backdrop, presented customers with the beauty of performing art and culture, which was not only relaxing but also culturally enriching. Built environment pictures, mainly with a design to match the local culture as the backdrop, presented customers with the beauty of architectural design, arts, and crafts, which really widened their views of the world.

3.3. Procedure and Apparatus

To examine customers' preference of hotel marketing images, the study used static stimuli (images) for the experiment and an eye-tracking device to capture data of customer eye movement when observing the marketing images. The sampling rate of the eye-tracking device was 60 Hz. The distance between the test participant and the monitor displaying the stimuli was 60 cm, so the fixation of test participants fell right onto the center of the monitor. The stimulus was presented on a 24-inch widescreen TFT monitor with a resolution of 1920 × 1080 pixels. Before the start of the eye-tracking experiment, the illuminance measurement function of a hand-held environmental measuring instrument was activated to verify the luminous flux in the experimental environment. Test participants wore over-ear headphones so their visual judgment would not be affected by surrounding sounds. The participants tested in the laboratory.

During the study, the standards of visual attention measurement were based on the research conducted by Pieters et al. [35] and Scott et al. [14], and the indicators for analysis included fixation duration and fixation count. These eye movement indicators are common and can effectively show the mode of customers' visual attention [35,38]. The eye movement of each test participant observing the static stimuli was recorded by the eye-tracking instrument and analyzed for display and output by the specialized eye movement analysis software.

3.4. Data Analysis

The following process was conducted in the data analysis process. First, eye movement data were analyzed. Total observing duration and count of fixations for each image from 63 participants were calculated through eye-tracking analysis software. Average total observing duration and count of fixation for each picture were then calculated for further analysis with regard to the influences of combination between servicescape and performing art. Second, the eye movement data of visual attention were analyzed. T-tests were conducted to compare the effects of environmental characteristics of marketing images on visual attention.

4. Results

4.1. Effect of the Natural Image on Customers' Visual Attention

As shown by the analysis results of eye movement data in Table 1, both the average total fixation duration and average total fixation count of participants for the image characteristics were statistically significant ($p < 0.001$). The average total fixation duration of participants for the natural images (10.42 s) was higher than that for the built images (6.98 s); the average total fixation counts of participants for the natural images (15.44 frequencies) were higher than those for the built images (9.45 frequencies). In other words, both the fixation duration and fixation count for the natural images were greater than 60% of the total fixation duration and fixation count.

Table 1. Comparison of the Effects of Image Characteristics on Customers' Visual Attention.

Eye-Movement Parameter Image Characteristics	Average Total Fixation Duration		Average Total Fixation Count	
	Seconds	t-Value	Frequencies	t-Value
Natural image (n = 32)	10.42	5.21 ***	15.44	5.36 ***
Built image (n = 31)	6.98		9.45	

*** $P < 0.001$.

Customers' visual attention to the natural images and the built images was also compared in a boxplot (Figure 2). The results showed that participants' total fixation duration (mean natural images = 10.42 s; mean built images = 6.98 s, $p < 0.001$) and total fixation counts (mean natural images = 15.44 s; mean built images = 9.45 s, $p < 0.001$) for the natural images were longer than those for the built images. Hence, *Hypothesis 1 is supported*.

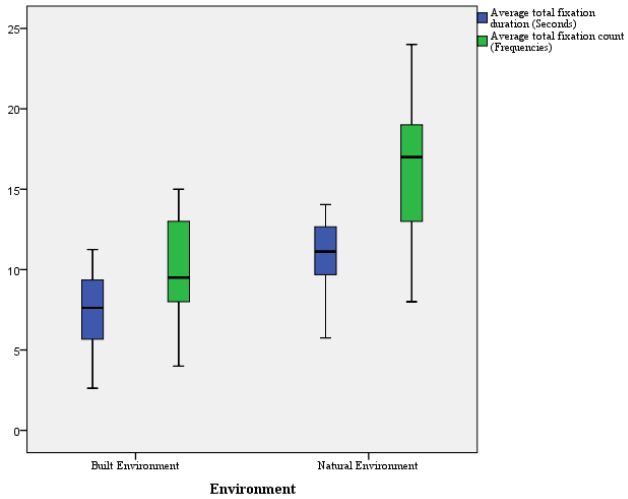


Figure 2. Boxplot of customers' visual attention on natural images and built images.

4.2. The Interaction Effect

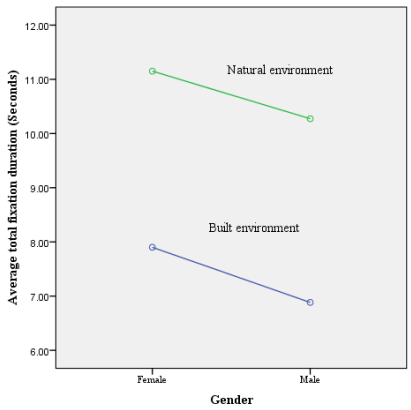
4.2.1. Gender

As shown in Table 2, regardless of gender, the average total fixation duration and average total fixation count of both males and females for the natural images were higher than those for the built images. Furthermore, as the interaction test showed, the effect of the interaction between gender and image characteristics on the average total fixation duration ($F_{\text{Fixation duration}} = 0.071$, $p = 0.791$) and the average total fixation count ($F_{\text{Fixation count}} = 0.389$, $p = 0.535$) were not statistically significant. Furthermore, based on the directions of interference effects on the interaction plot of gender (Figure 3A,B), the interactions between gender and the environmental characteristics for both

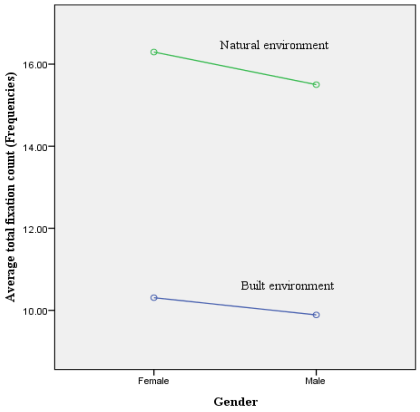
the average total fixation duration and the average total fixation count are approaching two parallel lines. Hence, *Hypothesis 2 is not supported*.

Table 2. Effect of predispositions on customers' visual attention.

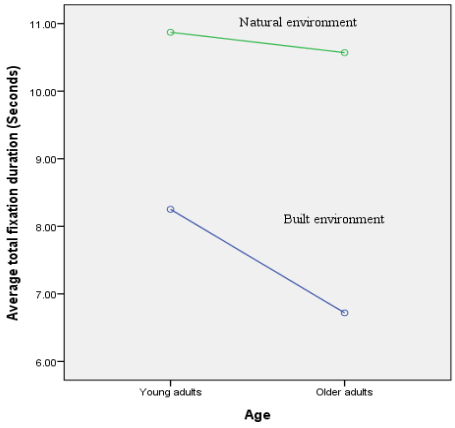
Servicescape Eye Movement Predisposition		Natural Images		Built Images	
		Average Fixation Duration (seconds)	Average Fixation Count (frequencies)	Average Fixation Duration (seconds)	Average Fixation Count (frequencies)
Gender	Male (n = 36)	10.27	15.50	7.68	10.46
	Female (n = 27)	11.51	16.30	7.09	10.46
Age	Young adults (n = 35)	10.57	15.48	8.25	12.00
	Older adults (n = 28)	10.87	16.67	6.71	8.27



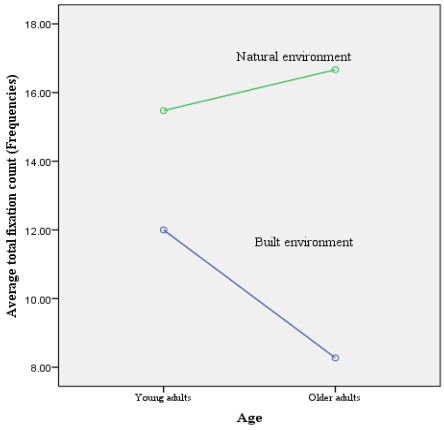
A. The interaction plot of gender for the average total fixation duration.



B. The interaction plot of gender for the average total fixation count.



C. The interaction plot of age for the average total fixation duration.



D. The interaction plot of age for the average total fixation count.

Figure 3. Interaction plot of predispositions (gender and age) and the image characteristics and the effect on visual attention.

4.2.2. Age

The results in Table 2 show that both the average fixation duration (10.87 s) and average fixation count (16.67 frequencies) of older adults to the natural images were higher than those of young adults. Besides, the interaction between age and the image characteristic was statistically significant for the average total fixation count ($F_{\text{Fixation count}} = 5.447$, $p = 0.023$). In addition, the interaction plot in Figure 3D shows that the visual attention to the natural images by older adults was greater than that

by young adults, while the visual attention to the built images by young adults was greater than that by older adults. *Hence, Hypothesis 3 is supported*.

5. Discussion

To pursue a balanced development of economy and environmental protection, hotels should develop service differentiation or business differentiation strategies from the concept of sustainability. The results of this study suggest that hotels should give priority to considering sustainability as the basis for service differentiation and brand positioning. In particular, hotels can use the natural environment as a basis for marketing purposes, or as a servicescape for delivering services. By using a sustainable environment as a servicescape, the image of the hotel can provide a higher value-added service to the customer.

Hotels can use the image of sustainable activities to convey the added value of the service to bring memorable experiences to customers, thereby increasing satisfaction and loyalty. These can produce a positive cycle for the economics of the hotel to support environmental sustainability. This study suggests that future research will integrate sustainability activities into the marketing and differentiation aspects of hotels, not only focusing on activities that reduce energy costs, such as energy conservation and water conservation, but also focusing on the expansion of added value of environmental protection.

The study results can benefit researchers and business managers as follows. First, the findings of the eye-tracking study revealed that the natural images attracted customers' visual attention and contributed to their emotional experience. The attractiveness of the environment in hotels correlated positively with the natural environment embedded in the ambience. Noone and Robson [20] argued that customers will pay attention to images of an environment rife with greenery. The current study demonstrates that the natural image is the key to attracting customers' visual attention. Analyzing the eye-tracking results also shows that marketing pictures with the natural environment are able to attract at least twice the fixation duration and frequency as opposed to those within the built environment. These results echo the perspective of Fredman and Tyrväinen [8], who argued that it is important for service providers to create an environment featuring the actual natural environment by extending the existing natural environment into the service ambience. To offer potential consumers appealing images, tourist hotels can design image elements matching the local natural environment [39].

Second, the current research confirmed that coupling the natural environment with performing arts is more effective in creating visual attraction than combining the built environment with performing arts. In other words, the more seamless a fit between the environment and performing art, the greater the effectiveness of the marketing images. More importantly, using the natural environment instead of the built environment as the stage for performing art is more suitable for hotel images anchored on performing art. The researchers found that, despite the same performance, staging it in different environments (natural/built) could convey different messages to the audience. The results of eye-tracking analysis also show that nature is more suitable to convey the attractiveness of traditional cultural lifestyles. An image with the characteristic of performers engaging in performing art in a natural environment can attract the viewer's visual attention. The hotel can convey the image of the actors performing an artistic performance in the mountains, forests, and streams to customers. To allow customers to experience the interactive rituals (including singing and dancing) that aboriginal people perform for a specific purpose with the natural environment, the hotel can convey the image of the actors performing art performances in the environment of mountains, forests, and streams.

When observing the pictures of the hotel, the customers will simultaneously receive stimulation from the performing arts and the background environment of the image. These stimuli will further affect their visual attention. To provide customers with a consistent, integrated, and memorable impression, the hotel manager should recognize that the customer experience stems from the harmony between the actual natural environment and performing arts [11], and strive to strike a balance between

the stage and the performing art itself. These findings are similar to what has been discovered by Chang [39] and Siu et al. [22].

Third, gender and age are the main characteristics of market segmentation and the keys to the success of marketing strategies. The results of the study show that young consumers prefer built images, while older consumers prefer nature images. If the hotel misjudges the customer characteristics in the market segment and conducts marketing activities with the wrong customer characteristics, the hotel will spend a large amount of money and will not obtain the expected marketing effectiveness.

The ANOVA analysis with eye movement data showed that gender did not moderate the impact of the picture characteristics (natural/built) on visual attention. In addition, the interaction plot shows that older consumers had more visual attention on natural images than younger consumers, while younger consumers had more visual attention on built images than older consumers. Thus, the study found that gender has no significant impact on sustainable consumption, but age has a significant impact on sustainable consumption. Older consumers are more likely to get attention restoration from the natural environment, and prefer to observe the performing arts in the natural environment. Young consumers prefer to experience the novelty and unique service experience in an environment with a unique lifestyle created by the hotels.

By examining the influence of gender and age on hotel images (including performance art and environmental characteristics), this study contributes to the predispositions research on hotel field. Gender and age are relatively stable predispositions and less susceptible to changes in strategies or pricings of competing firms, even though these relatively stable predispositions are key to customers' consumption decisions [20,44]. Research on marketing strategies points out that the success of image-eliciting strategies lies in the demographics of the receivers of image stimuli. Using image-eliciting strategies may prove more successful in creating mental pictures among some individuals than others. Walters et al. [16] believe that the difference in demographics is worth exploring because such factors could impact customers' interpretations of the images. Walters et al. [16] also suggested that hotels should analyze the demographics of target customers because these characteristics influence customer's elaboration and attention to hotel images.

However, the ANOVA analysis with eye movement data showed that gender did affect the visual responses to hotel's images. Furthermore, the results of eye-tracking analysis showed that, in the natural pictures, the fixation counts of older adults for these marketing images of performing art were higher than those of young adults. The results of the current study also support the findings of previous studies: older customers pay more attention to artistic and cultural objects as well as the historical and cultural meanings embedded in such artifacts. For example, Alelis et al. [46] compared the frequency of observing cultural artifacts and museum visits between older adults and young adults. They found that older adults had a higher frequency of observing cultural artifacts and enjoyed the actual objects more. This finding echoes the research results of Noone and Robson [20] that customers' visual attention varied with age.

Finally, this study confirmed that eye movement analysis is suitable for examining the impacts of the green environment on the consumer's visual attention and the behavior intentions of sustainable consumption. This study also demonstrated that eye movement analysis can be used to confirm consumers' visual responses to marketing images of sustainable consumption. This result is similar to the results of previous studies, such as Wang et al. [47] and Wang et al. [9].

5.1. Conclusions

To fill the gap between sustainability activities and marketing image, this study is based on the triple-bottom-line perspective to explore the contribution of sustainable consumption and marketing images of the tourist hotels. This study has several contributions to the existing literature. First, this study used the triple-bottom-line perspective to explore the connection between sustainability and marketing images and found that using the natural environment as the servicescape of performing arts can provide consumers better visual experience in the tourist hotel context. Second, previous studies

have rarely explored customers' responses to hotel marketing images, which is not conducive to the hotel's ability to develop an image that presents a good visual experience to the customers. This study used eye-tracking analysis to confirm that age would influence consumers' responses to hotel images. This result implies that in developing a sustainable consumption image, the age of the consumers should be considered to develop a suitable marketing image for their hotels.

Third, this study also extended attention restoration theory to sustainable consumption field by confirming the natural environment is a more suitable background for performing art to create an appealing sustainable consumption image. Finally, this study showed that eye-tracking technology is suitable for examining the effects of hotel's marketing images on customers' visual attention. Visual behaviors are unfolded through a selective process. Customers pay attention to important information and ignore unimportant information [48]. By capturing the visual trajectory of the observing of marketing images, eye-tracking analysis can aid managers of tourist hotels to diagnose the effectiveness of their advertisements.

5.2. Theoretical Implications

This study has some academic contributions to the present literature. First, this study extends the triple-bottom-line perspective to the marketing research field of tourist hotels and demonstrates that the images of artistic performances in the natural environment can successfully capture the greater visual attention allocation of older consumers. Previous sustainable research ignores marketing as a key link to support environmental sustainability [7]. Previously, sustainability literature focused on reducing the negative impacts of environmental damage, while this study focuses on the added value that protected environments can bring to consumers in hotels. Environmental sustainability can provide consumers with higher added value through the efforts of marketing activities and attract consumers' visual attention. Through marketing activities, hotels can deliver this added value to customers and successfully capture their visual attention. This study also provides a new research orientation for sustainable consumption and sustainability in the field of hotel marketing.

Second, by exploring the differences in the allocation of visual attention to sustainable marketing images among consumers with different characteristics, this study expands the research direction of visual processing in the field of sustainable consumption and attention recovery. Most existing literature still uses interviews or questionnaires to explore consumer perceptions of marketing images (i.e., [1,2,4,5]). These methods inevitably involve subjective judgments of consumers or researchers. How the characteristics of the marketing image capture the consumer's attention distribution has not been confirmed. In particular, how demographic characteristics affect consumers' visual attention to sustainable consumption images remains to be clarified. This study clarified that gender and age affect consumers' visual attention behavior when observing sustainable consumption images, and also found that different demographic variables have different effects on visual attention. These findings enrich the literature on sustainable consumption and attention restoration, and provide a new research direction in the field of visual processing behavior. For example, the performance art image with built clues attracts more visual attention of young consumers, and the relative performance art image with nature clues attracts more visual attention of older consumers. There is no significant difference in the visual response of gender to sustainable consumption images.

The final contribution of this research is to provide a new research method direction in the field of visual marketing compared to the traditional hotel marketing field. This study uses novel methods and rigorous research designs to deal with consumers' visual behavior, and provides unbiased observation and analysis of consumers' visual behavior through eye-tracking instruments. Understanding consumers' responses to marketing images has always been an important issue for researchers and practitioners. Most of the previous studies used surveys and interviews to explore consumer responses to marketing images. However, these research methods rely heavily on consumer subjective assessments, leading to research results that are susceptible to human factors. To enhance the reliability and validity of traditional research methods, this study uses multiple research methods that integrate self-reporting and eye movement data to explore consumers' visual behavioral responses to sustainable consumption images.

5.3. Practical Implications

This study presents the following recommendations to hotel management: First, customers' preference to the marketing images with the natural environment do not vary with gender. The hotel management does not need to design marketing pictures for a hotel based on gender. However, hotel management needs to design and present age-specific pictures for their target customers. Specifically, hotels can try to use the natural environment for the servicescape design basis if older adults are their target customers, and provide opportunities and space for customers to be exposed to nature within the hotel space by designing services around that experience. Second, when presenting performing art as a service to customers, hotels should choose the natural environment instead of the built environment as a servicescape for performing art. Coupling performing art as a service with a natural servicescape can convey messages which customers find attractive. For example, the hotel managers can develop suitable performing art anchored in the local culture as a service and stage it amid a natural servicescape. Third, before launching the marketing campaign, hotels can use eye-tracking analysis to observe how target customers react to the advertisements, so as to ensure effective use of marketing resources and optimize benefit through the use of advertising images.

5.4. Limitations and Future Research

There are some limitations in this research. First, the hotel used in this study is surrounded by a natural environment. Consequently, the research findings may not be applicable to business hotels which are not surrounded by nature. Furthermore, it is difficult to successfully obtain eye tracking data of the older adults, thus resulting in fewer older adults samples. Future research should increase the sample size of older adults through better methods for recording eye tracking data of the older adults.

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Appendix A

Experimental Stimulus

Figure A1. Natural images with performing art. (Source: Volando Urai Spring Spa & Resort).

Figure A2. Built images with performing art. (Source: Volando Urai Spring Spa & Resort).

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