

Co-designing Sustainable Experience in Hospitality Using Eye Tracking

Lilyana Elola

Dr. Ye qiang (Kevin) Lin

Dr. Ye (Sandy) Shen

Experience Industry Management Department

California Polytechnic State University, San Luis Obispo

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Introduction

The hospitality industry is one of the most important economic sectors driving growth in both developing and developed nations alike. In 2019, the World Travel and Tourism Council reported that this industry contributed 10.3% to the global GDP, accounting for more than 333 million jobs (World Travel & Tourism Council, 2022). Despite an increase in both domestic and international travel in the wake of the COVID-19 pandemic, guests have grown increasingly aware of the environmental burden that hospitality poses on the global climate. According to the United Nations Environment Programme's latest research released in December 2019, CO2 emissions from the hospitality sector are forecasted to increase by 25% by 2030 from 2016 levels (World Tourism Organization and International Transport Forum, 2019). As such, understanding and managing sustainable guest experiences has become a key determinant of success in the hospitality industry.

Understanding and managing attention is one of three important indicators used in this study to measure the value of sustainable guest experiences. The hospitality industry offers an excellent platform for which to understand visual attention (Wang & Sparks, 2016). The intangibility of hospitality products requires businesses to create a more visual servicescape with an emphasis on images, signage, and aesthetics. The perceived value of these visuals affects guests overall experience and satisfaction with a business's product services both in a servicescape and cyberscape setting. Since 2011, the hospitality industry has adopted eye-tracking technology as a quantitative indicator of guest value (Green, Murray, & Warner, 2011). Despite psychological studies exploring emotional response, there is still a lack of academic research surrounding the guest value of sustainable experience management in hospitality.

Thus, the purpose of this study is to examine the perceived guest value of sustainability related experiences in a servicescape setting. This research can be used to better communicate with and manage guests' sustainable experience, as well as resolve value asymmetry between supply and demand. The findings of this study can also be used to apply design thinking to conceptualize touchpoints of sustainable experience based on the ESG propositions and compare heterogeneity of sustainable experience designs.

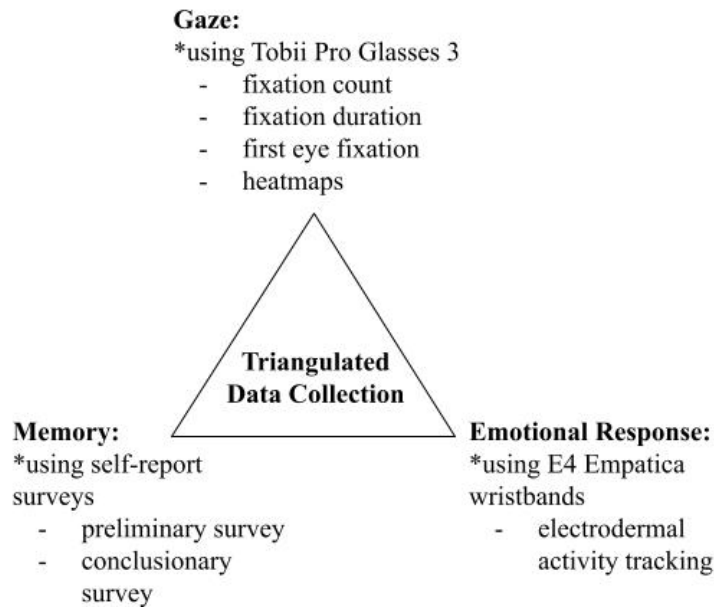
Methods

This research utilized a triangulated approach (see Figure 1) to better understand the multidimensional facets of guests' sustainable experience in a servicescape hospitality setting. This approach focuses on the importance of participants' gaze, emotional response, and memory. The first step of this methodology included contacting hotels on the greater central coast of California. With the informed consent and cooperation of hotel staff, researchers conducted interviews to capture implicit sustainable values of the hotel. Interview protocol was developed by ESG propositions and asked critical questions about the purpose, intent, support, and strategy of the hotel's intended sustainable consumer experience. Researchers used these interviews to create a map, marking important sustainable touchpoints. These sustainable touchpoints are denoted as areas of interest (AOI). Three participants were asked to walk at their own pace along a course that mirrored the hotel's sustainable experience map. These participants were screened for pre-existing medical issues that in some way interfered with the reporting accuracy of chosen data collection technology.

A participant's gaze was assessed using Tobii Pro Glasses 3 eye-trackers. Each Tobii Pro Glasses 3 system is comprised of the head unit, recording unit, and controller application. A combination of 16 infrared illuminators, 4 eye tracking cameras, and one high-definition scene camera collects a reflection of patterns on the corneas of each individual eye. These patterns are collected to build a structural profile of the participants gaze using the following categories of measurement: fixation count, fixation duration,

first eye fixation, gaze plots and heatmaps. The Tobii Pro Glasses 3 system is considered extremely accurate, with a one-point calibration procedure and sampling rate of 50 to 100 Hz. Emotional response was measured using E4 Empatica wristbands fastened securely to each participant's non-dominant wrist. These wristbands utilize electrodermal activity [EDA] tracking technology that measures participants skin conductance in real time, generating biometric data. This biometric data indicates peaks and lulls of emotional response. When analyzed in conjunction with Bluetooth location tracking, these emotional responses help researchers better understand participants feelings towards sustainable experience AOIs.

Figure 1. Depiction of Triangulated Data Collection



Results

Using the triangulated methodological approach, this research brought to light two key findings. First, there is an asymmetry between hospitality staff and guests about sustainable experiences. Second, there is guest value in communicating sustainable experiences.

Sustainable Experience Asymmetry

Findings indicate that 40% of AOIs generated a lasting experience for all participants. For the purposes of this study, a 'lasting' experience is considered any experience that guests recognize, react to, and remember. Of the five AOIs, the only two that all participants saw, reacted to, and remembered were the keycard lightswitch and motion activated sinks. It's likely that it was easier for the keycard lightswitch to generate a lasting experience amongst participants because of forced interaction. In order to look around the hotel room on their walk, participants had to turn on the lights using their keycard. All participants noticed compostable toiletries, drought resistant plants, and reusable drinkware according to their eye-tracking data. Still, some participants could not remember seeing these AOIs in their conclusionary survey. Of those participants who did remember seeing these AOIs, none exhibited any signs of an emotional response. Only one AOI was neither noticed, reacted to, nor remembered by any of the three participants. Surprisingly, this was the water-bottle refill station located outside of the hotel bathroom that all participants had not one, but two interactions with on their walk. These results show that there is a clear asymmetry between the hotel's projected and perceived sustainable guest experience.

Guest Value of Sustainability Communication

In a preliminary survey, all participants indicated that sustainability was amongst the third most important factor in evaluating their hospitality stay. Of these participants, all maintained that sustainability was still ranked amongst the top three most important factors after being made aware of the hotel's sustainability initiatives/AOIs. When asked how much they value sustainability as a principle of their hotel stay, all participants admitted to different degrees of consideration. When asked what sustainability meant to them in a hotel setting, most participants gave examples of sustainable actions hotels in general could take to reduce waste. Examples include air drying hand stations in the bathroom, solar power, and slower towel turndown. The consensus was that guests want to see as little natural resources wasted used as possible during their stay while still providing luxury. Some participants mentioned the guilt they feel using single waste hotel products or unnecessary housekeeping services. All participants indicated that they would be more likely to come back to a hotel they saw as "sustainable", rather than one who fails to communicate their sustainability initiatives.

The goal of this study was to examine the perceived guest value of sustainability related experiences in a servicescape hospitality setting. Although a review of pre-existing literature revealed that hospitality professionals see little likelihood of any market development of sustainability, our findings indicate that industry professionals can gain legitimacy and value from better communicating their sustainability efforts with guests.

Bibliography

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