

**CAN SENSORY MARKETING BE USED TO ADDRESS
OVERTOURISM? EVIDENCE FROM RELIGIOUS ATTRACTIONS IN
KYOTO, JAPAN**

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Abstract

The issue of overtourism have been discussed for decades. Addressing the problems caused by excessive tourist numbers in confined areas is vital, especially in cities like Kyoto, known for its cultural and religious attractions. This study delves into the experiences of visitors at Kyoto's religious sites, with a particular focus on overtourism and sensory elements.

The research analyses TripAdvisor reviews spanning from October 2010 to March 2020, covering the top twenty-five religious attractions in Kyoto. Through systematic text analysis tools like topic modelling and Leximancer, four key themes emerge: "Walk,"

"Impressive," "Beautiful," and "Crowded." These themes encapsulate tourists' experiences, including exploring temples, appreciating scenic beauty, and grappling with overcrowding.

The study underscores the overtourism challenge in Kyoto, substantiated by numerous mentions of crowded conditions in reviews. Interestingly, tourists often recommend arriving early to mitigate overcrowding, reflecting their adaptability and positive outlook even in crowded situations. Sensory analysis reveals that visual experiences dominate, followed by gustatory, haptic, auditory, and olfactory sensations. This suggests that tourists are drawn to religious sites not just for their spiritual significance but also for the rich sensory experiences they offer.

These findings have implications for destination marketing and management. Stakeholders can leverage insights from user reviews to craft effective advertising content. By promoting lesser-known temples and incorporating sensory marketing strategies, Destination Management Organizations (DMOs) can encourage tourists to diversify their visits, thereby alleviating the pressure on overcrowded sites. Collaboration with tour operators and effective marketing can also facilitate the inclusion of overlooked destinations in tour itineraries, fostering a more balanced distribution of visitors.

Keywords: religious tourism, tourist experience, overtourism, sensory marketing, TripAdvisor, Japan

Introduction

Overtourism has been discussed for decades and scholars continue working on strategies to contain or lessen the negative effects of too many tourists in too compact an area, however, no solid solution to significantly overcoming of overtourism (Butler & Dodds, 2022) has emerged. Often cited cities famous for overtourism were Amsterdam, Barcelona and Venice, but the Japanese city Kyoto easily competes with these destinations in terms of

luring masses of tourists: According to a study by Kyoto City Hall (2017), more than 53 million visitors, both domestic and international tourists, visited the city in 2017 (no newer figures available), a remarkable figure given that the total number of inbound visitors to Japan only amounted to 32.2 million in 2019, the year before the onset of the recent pandemic (Japan National Tourism Organization, 2021).

Newspaper coverage on the increase over the last two decades has been largely favourable, often citing the positive effect on the economy and employment. But soon the term "観光公害" (kankou kougai = tourism pollution) appeared in the media, as a term describing residents' discomfort in seeing their city overrun with tourists. These reports often accompany pictures of Kyoto's famous religious attractions, especially those of Kiyomizudera, Fushimi Inari-Taisha or Kinkakuji. One can safely assume that those religious sites constitute the main pull factor of Kyoto, as it sports seventeen world heritage sites certified by the United Nations Educational, Scientific and Cultural Organization (UNESCO), and also has hundreds of other religious sites to visit. To be precise, 243 Shinto shrines and 1,527 Buddhist temples are listed in the register by the prefectural government (Kyoto Prefectural Government, 2014), ranging from the aforementioned famous sites to lesser-known sites such as Bishamondo and Jingoji.

To develop destination marketing strategies aiming at diverting streams of tourists to lesser-known temples, thus alleviating the pressure on certain areas and transport routes, it is important to understand the motivation and experience of visitors to these sites. Such an understanding can create a basis for suitable marketing campaigns and policy strategies to achieve this goal. Although studying religious tourism has had a long history, what was often explored in terms of motivations and travel experiences were those of religious tourists and pilgrims (B. Kim et al., 2016; Raj, 2012; Terzidou et al., 2018; Thomas et al., 2018) or events (Gayathri et al., 2022; Porcu, 2012). In terms of the selected methodology, researchers either

applied a quantitative approach with a questionnaire design based on past research models (Drule et al., 2012; Gayathri et al., 2022; B. Kim et al., 2016; Liro, 2021; Nyaupane et al., 2015) or a qualitative, ethnographic approach with in-depth interviews (Porcu, 2012; Terzidou et al., 2018; Thomas et al., 2018).

Overtourism has been investigated from multiple angles, but the crowding of religious sites represents an under-researched area. Hence, this study aims to contribute to the literature in three aspects. The first is to explore visitors' experience of religious sites in Kyoto using systematic text analysis tools on TripAdvisor reviews that, to the best of the authors' knowledge, have not been previously applied in religious tourism. Second, reviews will be explored for any mention of overtourism, in what context, and whether this situation negatively influenced the overall travel experience of visitors. Finally, reviews will be examined on tourists' sensory experiences, which according to Gretzel and Fesenmaier (2010) are an important aspect of the tourism experience, while Kim, Kim et al. (2020), Lv et al. (2020) and Wei et al. (2022) also state that they have a significant influence on tourist satisfaction, visit and revisit intention and word-of-mouth recommendation, and should therefore be addressed in any destination marketing activities (Ghosh & Sarkar, 2016).

Literature Review

Overtourism

At the core of the overtourism discussion, the pressure from increasing numbers of visitors to a travel destination is debated frequently. Central topics are the effect of tourist crowds on the residents and the physical capacity of the destination or site. Early studies on this phenomenon date back to the 1970s-1980s, such as the development of the irritation index by Doxey (1975), which explains the reaction of residents towards tourism in four stages, from euphoria during the early onset of tourism development to an antagonistic

response characterised by clashes between residents and visitors. Another example is the tourism area life cycle by Butler (1980), which demonstrates six stages of tourism development from the first stage of exploration to the last stage with different possibilities, such as decline or rejuvenation.

The following decades were characterised by a steady increase in the number of international tourists, from about three hundred million in 1995 (United Nations World Tourism Organization, 2000) to over 1.4 billion in 2019 (United Nations World Tourism Organization, 2020). Unsurprisingly, this was accompanied by scholars increasingly exploring the effect; disseminating the term 'sustainable tourism;' and coining the terms "overtourism" (Edgell, 2006) and "tourismphobia" (Veríssimo et al., 2020). However, according to Veríssimo et al. (2020), the majority of overtourism and tourismphobia studies focused on a concrete destination, mostly a specific city such as Barcelona (Dimitrovski et al., 2022), Munich (Namberger et al., 2019) or Venice (Seraphin et al., 2018) or certain tourism spots such as Ihwa Mural Village in Seoul (H. Park & Kovacs, 2020), the ski slopes of Austria (Pikkemaat et al., 2020) or the Sabarimala pilgrimage in India (Illiyas et al., 2021). Themes range from economic to social and environmental or spatial impacts, and include topics such as the social conflicts of different interest groups (Alvarez-Sousa, 2018), culture shock (tourists from different cultures and behaviours) (Namberger et al., 2019), the loss of local people living in the historic city centre (Cardoso & Silva, 2018) or increased traffic and crowding (Jacobsen et al., 2019; Muler Gonzalez et al., 2018; Namberger et al., 2019).

Suggestions for the management of overtourism effects include local involvement and collaboration approaches, such as listening to communities and allowing them to participate in local tourism planning (Alvarez-Sousa, 2018) and creating public-private collaboration, strategic alliances, and networks nationally and internationally (Jacobsen et al., 2019). More aggressive approaches are offered by Jacobsen et al. (2019), suggesting limiting visitor

numbers or advocating the introduction or increase of tourist taxes to allow more sustainable management of a destination (Cetin et al., 2017) and Durán-Román et al. (2021).

Demarketing is another approach suggested by several authors (Çakar & Uzut, 2020; Hall & Wood, 2021; Oklevik et al., 2019): Demarketing is understood as marketing activities aiming to discourage tourists in general, or just certain segments of tourists, from visiting. This strategy, however, can be quite challenging when having to battle a flood of user-generated content on social media, such as TikTok postings, which are the cause for the popularity of certain destinations or tourist spots (Wengel et al., 2022). Another obstacle to reducing crowds can be the interests of tour operators who, according to Ji et al. (2022), have enormous power in channelling visitor flows to certain destinations and spots. Tour operators can therefore be the cause, but also part of the solution, of major congested tourism sites, depending on how they design their product mix.

With the help of smart technologies, scholars have also added managing overtourism to the research agenda, especially regarding managing crowds in urban destinations (Bouchon & Rauscher, 2019; Gretzel & Koo, 2021; Ivars-Baidal et al., 2019). The focus on cities and tourism crowds has been criticised by Koens and Klijs (2022) and Gretzel and Koo (2021), who lament that the aim of smart tourism projects is mostly to find short-term and direct solutions which fall short of exploring underlying causes, tensions, and effects and usually keep tourism issues separate from broader smart city initiatives. Koens and Klijs (2022) suggested using tools such as the Smart City Hospitality Framework, which merges sustainable development and city hospitality, and thus provides a diversity of stakeholder lenses to look through as a basis for intervention strategies. Mrsic et al. (2020) suggested a decision support system for destination management organisations to develop a data-driven Destination Management System (DMS) with available tourism big data and recent technological advances.

The effect of overtourism and congestion on tourists' motivations and experiences is a highly subjective matter, influenced by various personal and contextual factors such as cultural background, individual preferences, and travel objectives. In the context of travel, "crowding" denotes the extent of a destination's carrying capacity, while "crowdedness" refers to the convergence of a substantial number of people in a confined space (Jurado et al., 2013), both of which significantly affect the motivations guiding travel decisions. Crowdedness can be assessed from both the destination's environmental perspective and the sociopsychological outlook of tourists (Rasoolimanesh et al., 2019). Du Cros and McKercher (2015) differentiate between absolute carrying capacity, indicating "the maximum number of individuals a place can accommodate before experiencing damage to its fabric, and relative carrying capacity, a qualitative construct determined by how visitor volume effects the desired experience" (p. 38).

The relationship between crowdedness and tourist motivation exhibits a complex interplay. Numerous studies highlight crowded environments' positive effect on tourist motivation, with some individuals finding appeal in vibrant atmospheres, social interactions, and the opportunity to immerse themselves in a bustling setting (Grayson & McNeill, 2009). Tourists might perceive crowdedness as an indicator of destination attractiveness (Yin et al., 2020). Conversely, other research underscores the negative influence of crowdedness on tourist motivation. Overcrowding can lead to discomfort, longer waiting times, and challenges in fully savoring the destination (Jacobsen et al., 2019). The presence of large crowds may hinder individuals' ability to connect with their surroundings, thereby reducing motivation to explore and engage with the destination (Yin et al., 2020). Consequently, certain tourists may actively seek less crowded destinations or opt for activities offering solitude and tranquility, reflecting a contrasting motivation driven by a desire to avoid crowds (Garms et al., 2017).

In summary, tourists' perceptions of crowding at a destination hinge on their motives for visiting and their expectations of that destination (Neuts & Nijkamp, 2012). Previous studies have established that perceived crowding contributes to a destination's image (Tapachai & Waryszak, 2000), and tourists' perceptions of crowding influence their intentions to visit a destination (Jurado et al., 2013; Neuts & Nijkamp, 2012). Moreover, the perceived crowdedness of a destination informs subsequent tourist decision-making and behaviors (Pike & Ryan, 2004; Tapachai & Waryszak, 2000). Consequently, tourists' decisions to visit or revisit a destination and their recommendations to peers are shaped by their travel experiences and later perceptions of the destination (Pike & Ryan, 2004; Tapachai & Waryszak, 2000).

Religious Tourism and Tourist Experiences

Religious attractions such as cathedrals, temples and mosques attract not only pilgrims but global tourists for recreational, educational, and cultural purposes (Woodward, 2004). Prior research investigated non-religious visitors, and the results indicated they are interested in experiencing the local heritage (Hughes et al., 2013; Liro, 2021; Poria et al., 2003), the fame of the site (Hughes et al., 2013), recreations and gaining new knowledge (Nyaupane et al., 2015; Zhang et al., 2021) from religious sites. Zhang et al. (2021) further report that Chinese travellers on the Camino de Santiago pilgrimage route enjoy experiencing the natural environment, interacting with local people and culture, obtaining personal growth, and cross-cultural engagement. However, linking tourism with religious sites can lead to negative effects. The major factor affecting this experience was congestion and a lack of appropriate services available to visitors. Due to the heavy tourist presence at this site, the management had to find other ways to improve visitor satisfaction and ensure the monks' privacy (Frey, 1998).

Destination marketing offices (DMOs) dedicate much of their effort to ensuring tourists are satisfied with their tourism products and can attract more tourists via various marketing activities in the future. As a contemporary communication tool, the Internet offers an interactive, fast, and flexible channel from which DMOs can collect and review tourists' preferences and/or satisfaction with the provided products or services (Fuchs et al., 2014). Effectively managing the perceptions and experiences of tourists can maintain the value of a destination (Moon & Han, 2018). Counting the frequency of keywords appearing in the reviews was the most common text analysis practice among user-generated reviews (Huang et al., 2016; Zheng et al., 2009). However, manual categorisations without a systematic approach via software analysis may lead to biased classifications. Hence, a consistent and systematic categorisation of review data is warranted as this would fill the research gap, as well as help industry practitioners have a better picture and understanding of tourists' perception of religious attractions.

Sensory Marketing

Until the 1980s, marketing activities largely focused on the consumers' rational decision-making process and their selection criteria for products and services. This changed after researchers realised that affective and sensory elements affect consumer judgement and behaviour (Krishna, 2012; Krishna et al., 2016; H. H. Park et al., 2014; Spangenberg et al., 2005; Wörfel et al., 2022). Krishna (2012) states that sensory marketing can be an effective management strategy to create subconscious triggers that affect consumers' perception of a product. Examples of marketing opportunities listed by Krishna et al. (2016) are a) manipulating visuals and imagery in advertisements to stimulate certain imagery in the viewer's mind, b) including 'dynamic imagery', which is a static visual that conveys movement, stimulating the viewers' mind to continue the motion and thus creating a higher

engagement for viewers, c) incorporating a haptic component or, if not possible, the image of a touch element as a surrogate for the actual one, d) olfactory components proved to increase the impact of remembering products advertised in pictures, as well as their evaluative (desire to eat) and consumptive behaviour (amount eaten), and this also occurred simply by adding pictures where viewers imagine smells. Finally, e) music has been proven to positively influence consumers in their mood and involvement, given that the music fits the context, has a suitable rhythm and tempo, or when a very familiar piece of music is being used, suggestions also supported by H. H. Park et al. (2014) and Spangenberg et al. (2005).

Since then, sensory marketing has also entered the domain of tourism research, especially in connection with destination marketing and branding (Agapito et al., 2013; Dițoiu & Căruntu, 2014; Ghosh & Sarkar, 2016; Gretzel & Fesenmaier, 2010; Lv et al., 2020; Tasci et al., 2018; Wei et al., 2022) and food tourism (Ellis et al., 2018; Hoang & Tučková, 2021; Kim, et al., 2009; Yousaf & Xiucheng, 2018). Including sensory reference cues in destination marketing and management indicates a significant effect on tourists' intention to visit or recommend. For example, Ghosh and Sarkar (2016) state that an emotional connection to a destination can be groomed by inserting sensory elements in destination advertising. This 'destination emotion' leads to increased revisit intention and word-of-mouth recommendation. Lv et al. (2020) illustrated a similar conclusion that sensory impressions can provide additional predictive power for destination loyalty and has a stronger influence on revisit intention than an abstract destination image used in advertising. They further highlight that destination image can be distinguished from sensory impressions, that such impressions are popular content posted by social media users and seem to influence tourist satisfaction. Although much focus is on the sensory experience and reporting *after* a tourist's visit to a destination (Agapito et al., 2013, 2017; Dițoiu & Căruntu, 2014; Gretzel & Fesenmaier, 2010; Mehraliyev et al., 2020), Wei et al. (2022) stated that sensory stimulation

not only influences revisit intention but can also predict tourists' visit intentions when used in print advertisements prior to a trip.

Culinary attractions, in particular, have the potential to charm a variety of senses: visual, olfactory, gustatory, and even tactile. Points of interest have been researching the influencing factors for food and beverage consumption, which can range from seeking an exciting experience, to escaping from routine, having an authentic experience, appealing to the senses, and enhancing the experience of the physical environment (Kim, et al., 2009). Ellis et al. (2018) created an extensive overview of research in food tourism and cited the two concepts of activity-based and motivation-based food tourism as leading research foci in this context. Activity-based food tourism refers to food tourism being either sensory and cultural experiences, or a combination of both, where tourists seek to both engage in the physical experience of food consumption as well as visiting food production sites and participating in cooking classes or food-themed events. The motivation-based food tourism, on the other hand, cites the desire to consume certain food as the primary motive, or at least a strong motive, for choosing a certain destination and is more internally focused than the first category. Finally, Ellis et al. (2018) state authenticity plays a key role in tourists' food consumption, implying that visitors wish to consume a piece of culture whose identity is linked to a specific place.

Methodology

Data Collection

To understand the experience of tourists visiting religious attractions in Kyoto, this study extracted all English reviews from TripAdvisor posted from October 2010 to March 2020. Since then, Japan has been closed to inbound tourists due to the COVID-19 pandemic, and as a result, reviews after March 2020 were rarely posted in English. The reason for

selecting TripAdvisor as data source is that the site is the second most popular global travel and tourism website, ranking just after Booking.com (Statista, 2022). TripAdvisor classified tourism spots into distinct categories, and this study extracted those tourism spots appearing in the category of “things to do” with the sub-category of “Sacred & religious sites”. Given the substantial number of religious attractions in Kyoto, only the top twenty-five religious attractions were included. Parsehub online data fetching software was used to collect data from various web pages and stored as CSV file format. A total of 37,772 English reviews were extracted from the twenty-five religious’ sites.

Data analysis methods

This study employed a text analysis method called topic modelling to reveal a mixture of dimensions or topics from an enormous number of online reviews and has the potential to examine the reviewer’s experience after visiting religious attractions. According to Schweinberger (2022), topic modelling is a common procedure in natural language processing and machine learning. It denotes a type of statistical model for identifying “topics” in each selection of documents. It detects hidden semantic structures, or networks, within the data, based on the co-occurrence of terms within the documents or in our case, reviews. In this process, it is assumed that if a review is on a certain topic, words that are related to this topic will appear in the review more often than words related to other topics.

The scraped data were analysed using Leximancer for keyword extractions and theme clustering. Leximancer (Smith, 2022) is a content analysis software that, using sentiment analysis, automatically analyses text documents to identify high-level concepts via a co-occurrence matrix and delivers the key themes. It extends and reworks this approach with two stages of non-linear machine learning to provide a statistical means of extracting clear semantic patterns from text without a prior dictionary and discovers thesaurus-based concepts

based on word frequency and co-occurrence usage from a unified body of text. As the analysis is performed automatically, the reliability is high since it prevents bias from manually interpreting the textual content by researchers (Arici et al., 2022).

Findings and Discussions

Concept themes on Kyoto Religious Sites

Figure 1 illustrates a concept network diagram that was created with the top 60% of co-occurred concepts. Each concept is displayed as a small dot, with the size of the dot representing the degree of connectivity to other concepts – larger dots are more connected. Larger bubbles represent themes. The bubbles are heat mapped to represent their relative prevalence. Leximancer uses warm colours such as red, orange, and yellow to display more prevalent themes, and cooler colours such as green, blue and purple to represent less prevalent themes. Text in red indicates the names of the temples and their co-occurrences with the concepts. There are four main themes identified, including “Walk”, “Impressive”, “Beautiful”, and “Crowded”. When tourists explore Kyoto, they “walk” around to explore the temples/shrines, shops, streets, and food. Moreover, many of them hike the mountain at Fushimi Inari-Taisha and see the red gates. The beautiful concepts included the features that can be found in the temples, such as gardens, trees, ponds, and golden colour (in Kinkaku-ji). There is a high co-occurrence of beautiful and gardens in Tenryu-ji, Ryoan-ji and Ginkaku-ji. For impressive, the key concepts are mostly common adjectives describing the religious attractions, including interesting, amazing, famous, impressive and love. Wooden and statues (mainly in Sanjusangendo), are also associated with impressive. Tourists also found that Fushimi Inari-Taisha and Kinkaku-ji were crowded with people taking photos. Some reviews recommend that readers go early to avoid the crowd.

[INSERT FIGURE 1 HERE]

Religious Attractions and Overtourism

Figure 1 shows that the theme of “crowd” was a hot topic discussed in reviews; therefore, this study further explores this phenomenon. Frequency analysis of the top two hundred words of the pre-processed and cleaned data set was created. This list was then scanned for words that could be related to this theme to support the above finding, as this topic was a critical issue for reviewers. Indeed, the frequency analysis gives further evidence that overtourism was commented upon frequently: among the top mentioned words are expressions such as “crowd/crowds/crowded” which were mentioned 14,165 times (Rank #5) in the review title or text, “many/lot/busy” mentioned 13,524 times (Rank #7), and “people/tourist/tourists/visitors” mentioned 15,179 times (Rank #2). Based on these findings, it was decided to conduct further analysis of this phenomenon using the expression “crowd/crowds/crowded” (in subsequent analysis, all three words were used, but only the word “crowd” will be used in the explanation) as other top words would make the analysis too complicated to explore and interpret.

To establish a list of temples and shrines in Kyoto with the most and least comments on crowding, the co-occurrences of “crowd” and the names of religious sites was examined. The top two sites were Fushimi Inari Taisha and Kinkaku-ji with the highest frequency of “crowd” and a likelihood percentage of ten. Likelihood percentage denotes the probability that text segments containing a concept will also contain another concept. In Table 1, for example, the likelihood percentage of ten means 10% of the text segments that contain “Fushimi Inari Taisha” also contain “crowd”. After manually accessing the text segments, among the top likelihood percentage on “crowd”, three religious sites’ reviews denoted “not crowded” or “less crowded”. This illustrated that after visiting multiple religious sites in

Kyoto, tourists expressed their feelings about overtourism in the city. From the reviews, tourists expressed having positive experiences in less crowded sites with similar sensory experiences from crowded sites. For example, “*This temple offers beautiful sand gardens where you can feel really quiet and feel like you are miles apart from the crowds in Kinkaku-ji.*”.

[INSERT TABLE 1 HERE]

A list of top concepts with high co-occurrence with “crowd” is depicted in Table 2 . The results indicate that 44% of the concept “early” co-occurs with “crowd”. Almost half of the reviews emphasise and advise the readers to arrive at religious sites early to avoid crowds. The second highly co-occurred keywords with “crowd” were “tourists” and “people” with 24% and 21% likelihood percent, respectively. This co-occurrence is unsurprising as both the words “tourists” and “people” in combination with suitable adjectives and verbs can be seen as synonyms for “crowd”. Hiking at “mountain” (15%) and visiting torii “gates” (14%) were the two popular tourist activities but they may also cause crowding. Even if “crowded” religious sites affected the tourists’ travel experience, the results indicated their overall positive attitude, and the review authors provide recommendations to the readers on how to avoid the crowds.

[INSERT TABLE 2 HERE]

Sensory Analysis

This study adopted the *Vocabulary of the Senses*, developed by Frazier (1970) and used successfully in a text analysis project on restaurant reviews by Mehraliyev et al. (2020), to extract the sensory-related terms from the corpus data set in TripAdvisor. A total of 32,859

sensory terms from the five senses were extracted. More than 61% were visual-related terms (20,123 occurrences); 6,021 occurrences were gustatory-related (18.3%); 4,440 occurrences were haptic-related (13.5%); 2,187 occurrences were auditory-related (6.7%); and eighty-eight occurrences were olfactory-related (0.3%). Table 3 illustrates each sensory keyword with the supporting text. Visual-related keywords including *beautiful*, *sight*, *see*, *view* and *gorgeous* which mostly were co-occurred as a complement of the scenery. Gustatory-related keywords included *season*, *hot*, *green*, *sweet* and *spoiled* which were connected to food and drink. Haptic-related keywords including *cool*, *hot*, *hard*, *light* and *feel*, majorities were co-occurred with weather and temperature. Auditory-related keywords have two extreme directions. Reviews either express the surrounding areas as being either *quiet* or *noisy*. However, even though reviews were associated with noisy (e.g., noisy groups, crowded and noisy), some reviewers still held a positive attitude. For example, “*A little crowded and noisy... but still worth going*”. There were only two olfactory-related keywords, *smell* and *musty*. *Smell* mostly related to the wooden smell of the temple structure, and four reviews reveal that the old buildings smell *musty*.

Five sensory-related keywords *season*, *spoiled*, *beat*, *cool* and *jaw* have multiple meanings. Using *season* as an example, from a sensory point of view, it means adding favour to food; however, in this study, “*season*” refers to the four seasons of the year. Therefore, those keywords in Table 3 marked with “#” are not related to the five senses. Moreover, the keyword “*hot*” appeared in both gustatory and haptic themes but due to the limitation of Leximancer, the nature of *hot* cannot be distinguished by the system, therefore the frequency count is combined.

[INSERT TABLE 3 HERE]

In the next step the co-occurrence of sensory keywords with other concepts was investigated. Figure 2 depicts the outcome of this analysis in which sensory keywords are illustrated by colour bubbles and other concepts as white rectangles. The same colours indicated they belong to the same clusters/themes. For example, “green”, “tea”, and “sweet” and sample sentences is: “*Do not miss out the traditional Kyoto sweet shop which has soft pillowy’ sweets’ with green tea/ black sesame/ mango fillings*”. The keyword “hot” in Table 3 appeared in both gustatory- and haptic-related theme. The first “hot” is associated with the food’s temperature, and the second one is related to weather and temperature. However, due to the limitations of the Leximancer, the co-occurrences network diagram only shows the keyword once.

[INSERT FIGURE 2 HERE]

Recommendations

The results indicated visual simulations is the key stimuli for tourists. Moreover, this study also aligns with prior research indicating that tourists engage in various activities beyond religious and cultural exploration. They seek opportunities to connect with local heritage, engage in recreational activities, and immerse themselves in the natural environment, as found in studies by Hughes et al. (2013), Nyaupane et al. (2015), and Zhang et al. (2021). Thus, DMOs should strategically design and promote diverse experiences to cater to a broader range of tourist interests and mitigate them to different sites.

Sensory marketing strategies emerge as a compelling avenue for enhancing tourist experiences and diversifying destination appeal. Building on the findings of this study, stakeholders can employ sensory elements to manipulate tourists’ perceptions and actions. For instance, the inclusion of dynamic visual components can evoke a sense of movement,

transforming the visitor's experience within temple grounds, as proposed by Krishna et al. (2016). Iconic features like Japanese dry gardens, as observed in Kyoto, can be harnessed to mesmerize viewers with the impression of movement (Table 4: Photograph 1). By introducing smart mobile interactive travel guide with travel recommender system, tourists could keep track the crowdedness of popular religious sites and the recommender system could provide recommendations and suggest lesser-known religious sites with similar experiences to them. Many tourists choose to visit renowned religious sites because they perceived crowdedness as an indicator of the attractiveness of the site and can reduce the perceived risks of disappointments (Yin et al., 2020). By incorporating visual simulations such as virtual reality videos, augmented reality maps, and 360-degree images, etc., tourists could virtually see the lesser-known religious sites and can reduce their travel risk. Moreover, encouraging lesser-known religious sites to organize cultural activities for international tourists not only could motivate tourists to experience different Japanese culture in the religious sites, but also reduce overtourism from the popular sites.

The gastronomic dimension of tourism experiences is of particular significance. Traditional food items, such as tea and sweets, often motivate travelers to visit specific destinations, a trend highlighted in the study (Ellis et al., 2018). Tourists are increasingly seeking gastronomic adventures, and DMOs can leverage this trend by actively promoting culinary attractions such as in Table 4: Photograph 2. Incorporating dynamic imagery that depicts the aromatic essence of local dishes can entice visitors seeking not only gastronomical pleasures but also sensorial delights. In addition, imagery, or the suggestion that visitors can take some "smell" of the temple back home from the souvenir shop (Table 4: Photograph 3) could drive tourists to different tourist spots for an olfactory experience.

[INSERT TABLE 4 HERE]

Conclusion

Overcrowding at religious attractions in Kyoto is a well-recognized issue that has garnered attention due to tourists' dissatisfaction and the negative effect on residents (SCMP, 2018; The Independent, 2018). While demarketing these cultural treasures is a complex proposition given their UNESCO World Heritage status and global renown, this study has explored alternative strategies aimed at improving visitor experiences, alleviating congestion, and minimizing the adverse effects of overtourism.

The potential of sensory marketing as a potent tool for diverting tourists to less-crowded sites while simultaneously enhancing their overall experiences and safeguarding the cultural heritage of these destinations. Sensory experiences, including dynamic visual elements and culinary attractions, hold the potential to captivate tourists and draw them toward lesser-known yet equally enriching locations (Kim, et al., 2009). The utilization of sensory marketing strategies in collaboration with stakeholders and tour operators can play a pivotal role in diverting visitors, managing tourist flows, and contributing to a more equitable distribution of tourists, thus alleviating the tensions between residents and visitors (Ji et al., 2022).

The findings of this research demonstrated that, surprisingly, many tourists conveyed positive experiences despite encountering crowded conditions at these revered sites. This underscores the need for innovative strategies that effectively manage crowds while maintaining the allure of Kyoto's religious attractions. Several strategies have been proposed by researchers in response to the issue, ranging from encouraging early visitations and promoting the use of specific means of transportation to adjustments in tourism taxes for overnight stays. These strategies are designed to redirect tourists toward less-frequented sites within Kyoto, thereby mitigating the effects of overtourism (Mehraliyev et al., 2020).

Implications

Notably, this study sheds light on the concerning issue of overtourism in Kyoto. The theoretical contribution of this study is on travel motivation to perceived crowded destination. Prior research indicates that perceived crowdedness will reduce the tourist's travel motivation (Yin et al., 2020). However, the results illustrated tourists choose to visit these sites even if they are crowded. They propose solutions to their peers to avoid crowdedness such as arriving early to mitigate the effects of overcrowding, highlighting their adaptability and positive disposition even in crowded scenarios. Consequently, some tourists may seek alternatives, less crowded destinations or engage in activities that offer more solitude and tranquillity, highlighting a contrasting motivation driven by the desire to avoid crowds (Garms et al., 2017).

In addition, the methodology employed in this study for data collection and analysis has yielded valuable insights into the complex and multifaceted nature of the tourist experience at religious attractions in Kyoto. To gain deep insights from this extensive dataset on TripAdvisor, text analysis was employed, including topic modelling and sentiment analysis. These techniques allowed for the extraction of crucial information from the reviews, revealing themes that characterized tourists' experiences in Kyoto's religious sites. These themes encompassed diverse aspects of the tourist encounters, such as strolling through attractions, admiring their impressive nature, appreciating their visual beauty, and contending with issues related to overcrowding.

The findings of this study carry practical implications for managing tourism in Kyoto's religious attractions. First, it is evident that these attractions play a central role in attracting tourists to the city, possibly even ranking as the most popular draws, which aligns with previous research (Frazier, 1970; Mehraliyev et al., 2020). However, this popularity

contributes significantly to overtourism, leading to congestion in certain areas and on public transportation, as also noted in media reports (SCMP, 2018; The Independent, 2018).

Addressing overtourism is crucial for achieving sustainable tourism development.

One implication is the need for a multifaceted approach to mitigate and prevent overtourism. Stakeholders, including DMOs and local authorities, should consider a combination of strategies including encompassing marketing initiatives, collaboration efforts, and demarketing strategies, which have been suggested in prior studies (Gretzel & Fesenmaier, 2010; Kim, et al., 2009). Introducing visual simulations technologies can influence the tourists' destination decision-making process and mitigate overtourism in Kyoto.

Lastly, the role of tour operators in influencing tourists' flows cannot be understated. Collaborative efforts between DMOs and tour operators, both nationally and internationally, can be instrumental in diversifying the destinations included in tour itineraries, an idea supported by Ji et al. (2022). Effective marketing materials that emphasize sensory experiences can persuade tour operators to consider locations that may have previously been overlooked, thus mitigating overtourism in specific areas.

To conclude, addressing overtourism requires a comprehensive approach, combining marketing, collaboration, and demarketing strategies. By strategically embracing sensory marketing and catering to diverse tourist interests, stakeholders can create more balanced and memorable experiences while preserving the cultural significance of Kyoto's revered sites.

Limitations and Future Research

This study has three limitations. First, due to the researchers' own language limitation, this study only analysed reviews in English, so opinions from non-English speaking tourists were excluded. Second, some keywords in the sensory vocabulary contain multiple

meanings, which could affect the comprehensiveness of sensory analysis. Finally, simply using concept terms to analyse tourists' experiences may not be comprehensive. Negative terms such as "not" and "never" switch the meaning of the sentence completely to the opposite. As a result, when researchers work on overtourism with secondary data, analysing the frequency of "crowd" may include a large number of "not crowded" or "less crowded" references in their results. Future research could enhance the text analysis algorithms by including negation terms to overcome this major English text analysis limitation.

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Figures

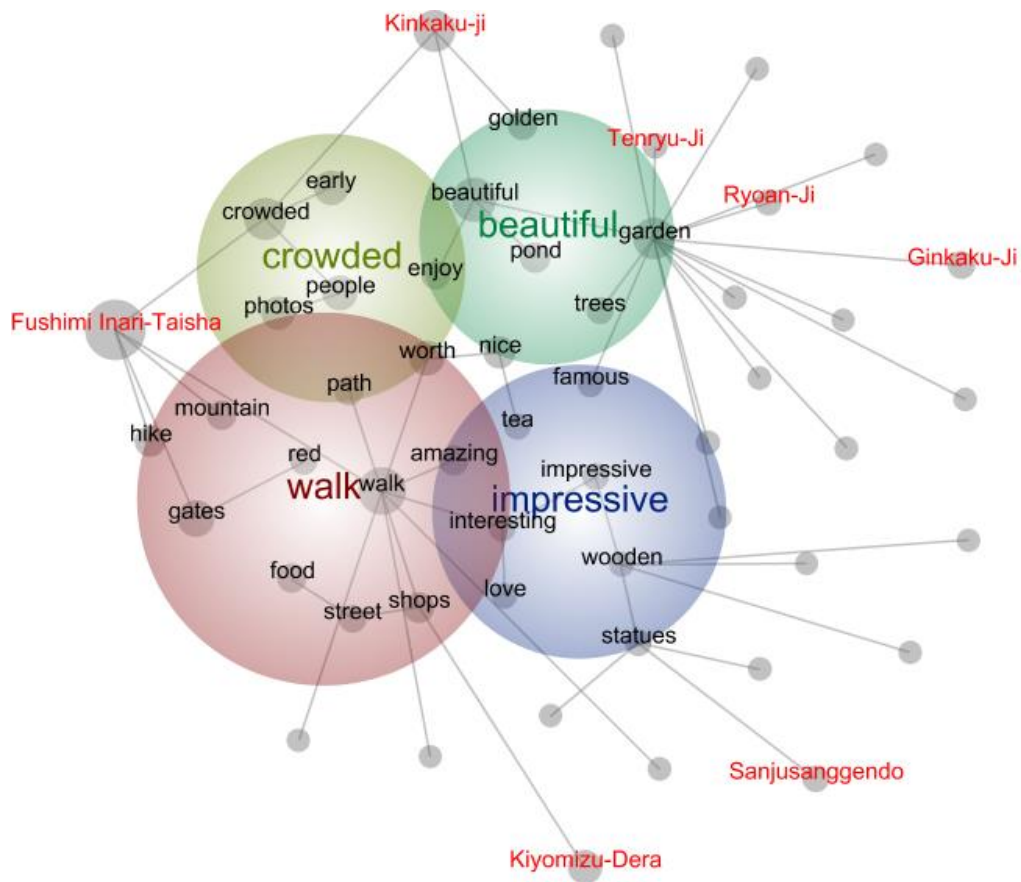
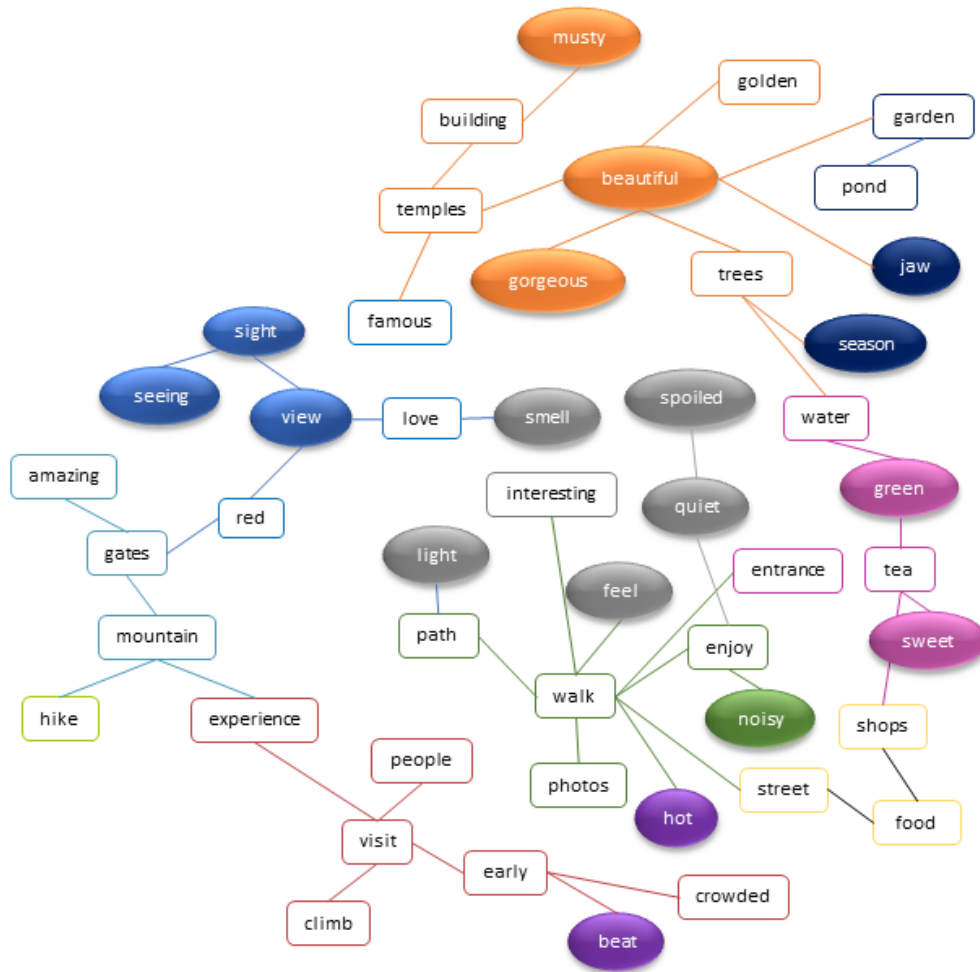


Figure 1. Concept themes related to individual temples (Top 60% co-occurred concepts only)

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Figure 2. Network Diagram Sensory Keywords co-occurrence with concepts

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Tables

Table 1. Religious sites with high likelihood of connection with the keyword “Crowd”

Rank	Temple/Shrine	Count	Likelihood Percent	Sample Text
1	Fushimi Inari Taisha	5,594	10	Luckily the toris (<i>sic</i>) wind all the way up to the top of the hill (4km) and once you get over halfway the crowds almost disappear.
1	Kinkaku-ji	3,499	10	Definitely a must-see in Kyoto but be prepared for crowds unless you arrive before the tour busses.
2	Tofuku-ji	155	9	Very crowded during the season of turning leaves but other time, nobody around
2	Shoren-in Temple	73	9	This is not as crowded as the other temples but worth a visit when in Kyoto since it is pretty centrally located.
3	Kiyomizu-dera	1,751	8	Quaint peaceful temple until thousands of crowds appeared.
3	Ninna-ji	78	8	This temple is not as crowded as the big ones, which makes it a very pleasant stroll in the garden and in the temple itself.
3	Honen-in	24	8	It's peaceful and less crowded than most of the temples in Kyoto, plus it's free.

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Table 2 Top 10 Concepts highly co-occurring with “crowd”

Rank	Related Concept	Count	Likelihood Percent	Sample Text
1	early	3,297	44	It's worth getting here early in the morning before it gets too crowded.
2	tourists	1,107	24	This place is crowded and Mostly Overloaded with Chinese tourist (<i>sic</i>) who arrive on tour buses.
3	people	1,454	21	People started tapering off as the hike got higher and higher. I would not recommend going on the weekends though.
4	enjoy	585	20	Enjoyed the location, but would prefer to see it in less crowded circumstances
5	photo	1,258	19	I do not recommend taking picture at the beginning of the gate as it will be very crowded, and you will be photographed together with the passers-by.
6	take	1,199	17	Take a picture and move on. The crowds do thin out the closer you get to the top.
6	tour	331	17	This was part of our tour I was looking forward to. Was crowded of course but what can you do.
8	large	291	16	Expect large crowds making photography difficult.
9	mountain	516	15	Plan to amble and take it slow aside from the crowds, the views of Kyoto and of the surrounding mountains are breath-taking and it would be the greatest shame were you to not make as many stops as you can afford and take in the scenery.
10	worth	1,205	14	Worth it to battle the crowds.
10	gates	1,118	14	Worth visiting and walk through all the torii gates! It is open 24/7 so be there early (before 8am) to miss the crowd.
10	experience	646	14	The crowd truly detracted from the experience.
10	path	436	14	While a lot of Fushimi Inari Taisha is paved or has concrete pathways, there are also a lot of stairs. And a lot of crowds.
10	peaceful	366	14	It always looks spectacular and can be quite peaceful when the crowds are down.




Table 3. Top Sensory Terms

Sensory	Keywords	Count	Sample Text
Visual (n=20,123)	beautiful	152,10	It's a nice hike to the top with some beautiful views and definitely worth the trek to escape the crowds in the main areas.
	Sight	2,463	A beautiful insight into Buddhism and the charm of Japan.
	See	1,408	Truly the most beautiful place I visited in Japan, there is so much vibrancy and art here – you have to see it!
	Gorgeous	1,042	Glad we went in as the garden is gorgeous, bursting with such vibrant colours.
Gustatory (n=6,021)	season [#]	2,877	The golden pavilion is different throughout the four seasons.
	Green	1,872	It's beautiful, it's serene, during the day, do stay and take a cup of green tea and enjoy the garden view.
	Hot	1,054*	Drinking hot tea while admiring the view to understand how the Japanese enjoys (<i>sic</i>) and appreciates the change of season
	sweet	185	Don't miss to taste a sweet green tea with golden flakes and also strange salty plum tea, again with golden flakes.
	Spoiled [#]	33	There were far too many obnoxiously loud tourists there this year for my liking, which spoiled the serene atmosphere of the temple gardens.
Haptic (n=4,440)	feel	1,551	This walk early in the morning or during a (<i>sic</i>) overcast day give me a very mysterious and cool feel.
	Hot	1,054*	Leading up to the temple are vendors selling green tea, ice cream and various Japanese treats, which is great on a hot summer day.
	Cool [#]	957	It's (<i>sic</i>) was a cool day so the walk was easy.
	Light	878	What was amazing was that all this happened as we were suddenly greeted by light snow flakes (<i>sic</i>) which made the experience even more magical.
	Hard	758	Have a hot hard-boiled egg (there is a shop selling it) after the climb and it tastes especially nice.
Auditory (n=2,187)	quiet	1,550	This temple offers beautiful sand gardens where you can feel really quiet and feel like you are miles apart from the crowds in Kinkakuji.
	Beat [#]	421	We took the very first train at 5am to beat the crowds at Fushimi Inari.
	Noisy	166	No matter how crowded and noisy at my side, the temple always made me feel tranquillity.
	Jaw [#]	50	Jaw dropping view of autumn leaves in Kyoto
Olfactory (n=88)	smell	84	view of Kyoto and the Pagoda along with the lush green trees and smell of its wooden structure all make for a great visual treat and is indeed calming.
	Musty	4	However, naturally, being an older building, it is pretty musty inside, and it was a bit of a relief to get out into the fresh air after exiting.

[#] Keywords with multiple meanings which are not relevance to sensory experience in this case

* Keyword belongs to two sensory groups and the count is combined.

Table 4. Elements for Sensory Marketing for Religious Attractions

Dynamic Visual Component	Gustatory Component	Olfactory Component
 <p data-bbox="229 757 536 815">Photograph 1: Japanese Dry Garden</p>	 <p data-bbox="625 645 884 734">Photograph 2: Wagashi (Traditional Japanese Confections)</p>	 <p data-bbox="976 645 1289 676">Photograph 3: Incense Sticks</p>

(Photo Credit: The author)

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