

## **It's in the Air: Aroma Marketing and Affective Response in the Hotel World**

Basak Denizci Guillet<sup>1</sup>, Metin Kozak<sup>2</sup>, Deniz Kucukusta<sup>3</sup>

<sup>1</sup>School of Hotel and Tourism Management,  
Hong Kong Polytechnic University, Hong Kong SAR, China  
E-mail: [basak.denizci@polyu.edu.hk](mailto:basak.denizci@polyu.edu.hk)

<sup>2</sup>Dokuz Eylul University, Izmir, Turkey  
E-mail: [metin.kozak@deu.edu.tr](mailto:metin.kozak@deu.edu.tr)

<sup>3</sup> School of Hotel and Tourism Management,  
Hong Kong Polytechnic University, Hong Kong SAR, China  
E-mail: [deniz.kucukusta@polyu.edu.hk](mailto:deniz.kucukusta@polyu.edu.hk)

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*The future of hotel branding is when there are no logos,  
no advertisements blasting, but I can just feel I'm there ...*  
— Martin Lindstrom, the author of *Brand Sense*

### **Abstract**

Smell is considered to be the sense that is most closely attached to emotional reactions. This makes scent in the hotel environment an important atmospheric variable to study, because fragrances are expected to increase the likelihood of producing an emotional reaction from consumers. Capitalizing on smell's ability to cue memories and conjure up emotions, the purpose of this research is to examine the emotional states evoked by various hotel scents in a hotel business in Hong Kong that uses scent throughout its premises. More specifically, this study intends to make a connection between the emotional states evoked by the hotel scents and how hotel businesses can make use of their guests' emotional responses. Scent marketing is an overlooked subject in hospitality and tourism research.

**Keywords:** hotel scent, ambient scent, experiential marketing, hotel management

### **1. Introduction**

The sense of smell is considered to be the sense most closely related to emotional reactions. The actual ability to smell is closely linked to memory, and scent can be a powerful memory trigger. This claim is backed by scientific evidence (Wilkie, 1995). This is the reason why many hotel businesses around the world are making an effort to develop their own scents to represent their identity. Hotel businesses are using scent recognition to make guests feel good and, more importantly, to create memorable experiences. Perhaps a comment by Martin Lindstrom, the author of *Brand Sense*, explains it best: "the future of hotel branding is when there are no logos, no advertisements blasting, but I can just feel I'm there" (Stellin, 2007).

Major international hotel chains that have created their own signature scents include, but are not limited to, Mandarin Oriental, Le Meridien, Langham, Marriott, Omni, Ritz-Carlton, Shangri-La, Sofitel, and Starwood, in addition to many boutique hotels (Stellin, 2007; Forbes Travel Guide, 2012; Mekhail, 2011). For instance, according to Shangri-La Hotels and Resorts CEO Greg Dogan, “it adds another sensory layer of welcome” whether you are at Shangri-La in Hong Kong or Istanbul (Mekhail, 2011). Hotel scents are used throughout the premises. The most popularly mentioned locations are the lobby and common areas, conference rooms, pools, guest rooms, and restaurants. Some hotel brands, such as Shangri-la, Langham, and W Hotels, go one step further and sell fragrance products in the form of home fragrance and candles.

Capitalizing on smell’s ability to cue memories and conjure up certain emotions, the purpose of this research is to examine the different emotional states evoked by the hotel scents by studying a hotel business in Hong Kong that uses scent throughout its premises. More specifically, this study intends to make a connection between the different emotional states evoked by the hotel scents and how hotel businesses can make use of these emotional responses by their guests. Scent branding and scent marketing is an overlooked subject in hospitality and tourism research. To our knowledge, this is the first study of its kind, and it intends to enhance our understanding of the different emotional states evoked by hotel scents.

The hotel scent in this research is an ambient scent. “Ambient scent refers to scent that does not originate from any particular object but is present in the environment” (Mattila and Wirtz, 2001, p. 275). Similar to this definition, “hotel scent” refers to customized fragrances developed by hotel businesses that can be delivered through the hotel’s heating and cooling systems, via discreet atomizers, or by way of ingenious diffusers in the lighting. Ambient

scent is one of the atmospheric elements that has not received the interest from the hospitality and tourism researchers that it probably deserves (Zemke and Shoemaker, 2007).

Of the five senses, smell is considered to be the sense that is most closely attached to emotional reactions (Wilkie, 1995). This is thanks to the olfactory bulb which is directly connected to the limbic system in the brain. The limbic system activates immediate emotion in humans (Wilkie, 1995). This makes scent in the hotel environment an important atmospheric variable to study, because fragrances are expected to increase the likelihood of producing an emotional reaction from consumers. This line of thought is consistent with the environmental psychology model (Mehrabian and Russell, 1974; Donovan and Rossiter, 1982), as well as with the servicescapes theory (Bitner, 1992). The literature review provides a brief overview of environmental psychology as it relates to this study, followed by a summary of olfaction research.

## **2. Conceptual Background**

### *2.1 Environmental psychology*

The stimulus-organism-response (SOR) paradigm, which is drawn from environmental psychology, provides the theoretical underpinning for studying the effects of scent. The SOR paradigm postulates the effect of a stimulus on a response mediated by an organism (Bitner, 1992; Donovan & Rossiter, 1982; Mehrabian & Russell, 1974). More specifically, within this paradigm the environment is a stimulus (S) in which atmospheric cues influence the customers' emotional states (O), which in turn influence the customers' overall response (R). The SOR paradigm has been used extensively in the retail industry to measure the effects of atmospheric elements on consumer responses (Mehrabian & Russell, 1974). Using the study by Mehrabian and Russell (1974) as a departure point, Mattila and Wirtz (2001) manipulated ambient scent and background music in a retail environment, and showed that, when the

arousal effects of ambient scent and background music matched, consumers' evaluations of their shopping experience were improved. Mehrabian and Russell's (1974) model of the effects of atmospherics on consumer behavior is one of the most influential models in retail and hospitality research. Their model posits that the relationship between environmental stimuli and human behavior is mediated by an emotional response.

Gulash and Bloch (1995) developed a conceptual model to explain the effect of ambient scents on consumers, taking mostly the retail setting into consideration. In their model, ambient scent is presented as an environmental cue that is compared with scent preferences to influence customers' affective responses and ultimately their approach-avoidance behaviors.

Atmospheric elements have been of interest to hospitality researchers as well. The term "atmospherics" refer to "the effort to design buying environments to produce specific effects in the buyer that enhance his purchase probability" (Kotler, 1973, p. 50). The primary sensory channels are scent, sight, sound, and touch. Countryman and Jang (2006) focused on color, lighting, layout, style, and furnishings in the hotel lobby as atmospheric elements. They found that color, lighting, and style were significantly related to the overall impression given by a hotel lobby. Ariffin, Bibon, and Abdullah (2012) examined color, design, and lighting as atmospherics that contributed significantly to consumer behavior in the restaurant setting. They concluded that atmospheric elements contributed significantly in each representation of consumer behavior. Liu and Jang (2009) also used restaurant settings to study atmospherics, and analyzed the effect of dining atmospherics on customer emotions and perceived value. They found that dining atmospherics had a significant effect on customers' emotions and their perception of value. Hirsch (1995) conducted a study on the effects of pleasant ambient scent on slot-machine gambling behavior in the casino industry. He found that the presence of one of the scents increased slot revenues in one area of the casino, while a section of the

casino that was treated with a second scent and a section of the casino that remained unscented did not see any significant change in revenues. Therefore, the results of his study are inconclusive. Zemke and Shoemaker (2007) conducted another study on the effects of scent on increasing social interaction in the casino industry. They reported that pleasant ambient scent can have a positive effect on increasing social interaction behaviors.

## *2.2 Olfaction research*

“Olfaction” is defined as the sense of smell, and it is regarded as the most emotional of the five senses (Hudson & Distel, 2002). It is also considered to be the most difficult sense to study, due to its high variability in the affective responses related to scents (Hudson & Distel 2002). Scent in the context of this research refers to ambient scent. Ambient scent is also known as atmospheric odor (Morrin & Ratneshwar, 2000). According to Zemke and Shoemaker (2007, p. 929), “one of the least-understood variables in an environment’s ambient conditions is ambient scent.” Scholarly research on the effects of ambient scent in the hospitality industry has been mostly limited to the casino industry studies summarized in 2.1. Outside of the hospitality industry, ambient scent research is conducted mostly in retail settings.

This study uses the Emotion and Odor Scale (EOS) developed by Chrea et al. (2009) and later modified by Ferdenzi et al. (2013) in an effort to identify the feelings elicited by odors. Their motivation in developing this scale is that “an accurate description of odor-elicited affective feelings seems to require a specific affect vocabulary and taxonomy, which differ from those provided by classical models of emotion theories” (Chrea et al., 2009, p. 58). The original EOS scale includes 36 items and 6 dimensions (groupings of these items) through factor analysis. This scale was developed in Switzerland with Swiss people as the sample. The six dimensions are: pleasant feeling, unpleasant feeling, sensuality, relaxation,

refreshment, and sensory pleasure. Chrea et al. (2009) called this tool the “Geneva Emotion and Odor Scale” (GEOS). Ferdenzi et al. (2011) used the GEOS scale to develop odor scales for two distinctive cultures, namely the United Kingdom (UK) and Singapore. Their findings indicated that three dimensions of the EOS were common to the three cultures: disgust, happiness/well-being, sensuality/desire, and energy. Soothing and peacefulness were common to the UK and Switzerland samples. There were also dimensions specific to each of the cultures studied. For instance, sensory and pleasure were specific to Switzerland, nostalgia and hunger/thirst were specific to the UK, and intellectual stimulation, spirituality, and negative feelings were specific to Singapore.

In a follow-up study, Ferdenzi et al. (2013) developed new EOSs for the United States, Brazil, and China, in addition to the previously developed EOSs for Switzerland, the UK, and Singapore. Ferdenzi et al. (2013) developed a universal scale that includes affective categories that are common to all of the cultures studied, and several culture-specific aspects that may be relevant in other cultures. Our study uses a universal scent scale consisting of 24 items corresponding to 9 categories to measure feelings elicited by hotel scents. These nine categories are: unpleasant feelings, happiness/delight, sensuality/desire, energy, soothing/peacefulness, hunger/thirst, interest, nostalgia, and spirituality.

### **3. Methodology**

Data for this study were collected from customers of a luxury international hotel management company in Hong Kong. We interviewed the chain’s brand director to get more information about its scent. This hotel is using a scent developed by Brandaroma (Asia) Ltd, and is a combination of ginger flower, peace lily, tuberose, lemongrass, and vanilla. During our research, we learnt that many international hotel companies (at least in Asia) use the services of Brandaroma to develop their signature scents. The scent is used in the hotel’s lobby and

reception area. The scent is piped through the hotel via the central air-conditioning system. The same scent is used in all of its hotels around the world. When we asked the brand manager whether any of the guests had commented on the scent, she replied that the hotel had received emails from guests wanting to purchase the scent. The scent is available for purchase at the hotel's gift shop in the form of a room spray, an essential oil, and candles. The scent was developed to increase brand loyalty, and the hotel group has not changed its signature scent since the initiation of the scent. The hotel management would like their customers to be able to relate the signature scent to a *sense* of place as well as to a scent of place. In the brand manager's own words, "Our customers can instantly recognize that they are in our hotel when they smell the signature scent, no matter they are in London, Hong Kong, or Shanghai" (personal communication, May 4, 2015).

To accomplish the above-referenced objectives, the study makes use of a structured EOS that has been developed by Chrea et al. (2008) and later modified by Ferdenzi et al. (2013) to measure the intensity of different emotional states evoked by the hotel scent. A three-part questionnaire was used to collect data. The first section includes a list of 24 items reflecting the different emotional states evoked by the hotel scent as independent variables presented to the respondents in a random order. These items are anchored with a 10-point Likert scale, varying between "extremely intense" (10) and "not at all intense" (1). This part of the questionnaire also includes questions on the respondents' understanding of the extent to which hotel businesses use scent in the various locations of the hotel premises, including the lobby and reception area, the lifts and corridors, the restaurant and bar, the guest rooms, the spa, the restrooms, the meeting space, and the fitness center. The second part includes a number of items to test the influence of independent variables over dependent variables, anchored with a 10-point Likert scale, such as loyalty, satisfaction, motivation to visit the hotel again, the contribution of the scent to the hotel's overall atmosphere, and likelihood of



purchasing the scent as a home fragrance or scent. The last part of the questionnaire includes the socio-demographic profile of the sample population, including gender, nationality, age, education, income, travel experience, and length of stay, among others. As this is the first scent study conducted in a hotel setting, we also include an open-ended question to ask participants their opinion about the hotel scent.

The sample population was selected from those guests staying at the partner hotel, and was categorized into two groups: “English-speaking guests” and “Mandarin-speaking guests.” Therefore, the questionnaire was first translated into Mandarin and then translated back into English by a professional native-speaker of each language. A pilot survey was then conducted among 25 guests in each group in order to establish the clarity and consistency of the questions. In addition, pretests were conducted to ensure that the majority of the customers consider the scent as a pleasant scent. The sample population consisted of guests whose names were randomly drawn out of the daily guest list, and each day between 5 and 15 guests were asked to complete the questionnaire. Official permission was granted by the hotel’s top administration to secure its close cooperation throughout the course of the study. As hotel management allowed only one person to collect the data, a trained graduate student was hired as an interviewer for the first three months of 2015. The interviewer was proficient in speaking in three languages — English, Mandarin, and French. The interviewer approached all of the respondents in person by asking for an appointment in the lobby. The sample size for the study is 326, after 12 surveys were discarded as they had not been completed properly.

#### **4. Findings and Discussion**

Table 1 presents an overview of the profile of the respondents. The sample is almost equally represented by males and females. Visitors of middle-age and with a high level of education are predominantly represented. The majority of the sample population originates from Asia,

and the purpose of the visit is mostly for pleasure, followed by business/meeting. Almost two-thirds of the respondents consider themselves as “experienced” or “very experienced” travelers. Almost 40 percent of the respondents had never been to the hotel before, whereas 15 percent had been two or three times, and another 15 percent had had four or more visits. The length of stay is extremely diverse, varying from 1 night to 14 nights. The average length of stay at the hotel is 3.26 days. The timing of the interview covers three different periods. The majority of the sample population was interviewed while they were still staying at the hotel, and about one-third was approached while checking-out of the hotel. Only about 18percent of the sample checked-in that day.

\*\*\* Please insert Table 1 about here \*\*\*

The majority of respondents confirmed that they had noticed the scent (91.7%). The ranking of locations where the respondents suggest hoteliers use scent appears as lobby, restroom, corridor, spa/sauna, lift, room, bar, meeting hall, fitness center, and restaurant. As such, the locations gaining the higher mean scores are mostly those hotel facilities that are open to the public (e.g. lobby, restroom, and corridor). The dining facilities, rooms, meeting halls, and fitness centers gained relatively much lower interest from the participants (see Table 2).

\*\*\* Please insert Table 2 about here \*\*\*

The Cronbach alpha value indicates that the study items are highly reliable (.937), exceeding the minimum standard (.80) suggested by Nunnally (1978). This means all 24 items reflecting the different emotional states evoked by the hotel scent, as developed by Chrea et al. (2008) and later modified by Ferdenzi et al. (2013), are internally consistent with each other, and so the questionnaire results are eligible for further analysis. The highest mean score is attributed to “refreshed” (4.94) while the lowest is attributed to “sad” (1.75).

An exploratory factor analysis was performed on the intensity of the different emotional states evoked by the hotel scent. Bartlett's test of sphericity (with a value of 4185.208,  $p < .001$ ) and a calculated Kaiser-Meyer-Olkin statistic of .93 (which could be described as "marvelous") indicated that the data seemed suitable for factor analysis. Principal component and varimax rotation procedures were used to identify orthogonal factor dimensions. Principal component factors with eigenvalues of 1.0 or greater were rotated by the varimax analysis. Variables with loadings equal to or greater than .40 were included in a given factor to decrease the probability of misclassification. Only one item ("unpleasantly surprised") was removed due to the lack of its relationship with any of the factor labels. All remaining 24 items from the factor analysis resulted in four factor groupings and explained 61 percent of the variance.

As indicated in Table 3, the factors' labels are "happiness and delight" (Factor I), "sensuality" (Factor II), "stimuli of hunger and memories" (Factor III), and "unpleasant feelings" (Factor IV). Most of the factor loadings were greater than .60, indicating good correlations between the items and the factor groupings to which they belonged. A Cronbach's alpha test was used to determine the internal consistency, which appeared "highly consistent" for all of the items attributed to each factor label. "Happiness and delight" received the highest mean score (4.58), followed by "sensuality" (4.21), "stimuli of hunger and memories" (2.64), and "unpleasant feelings" (2.21), in sequential order.

\*\*\* Please insert Table 3 about here \*\*\*

A two-stage least squares regression analysis was used to assess the relationship between one dependent variable and several independent variables. The dependent variables of the regression model were represented by such statements as how their experience with the scent makes the respondents feel loyal to the hotel brand, satisfied with the hotel, and motivated to

revisit the hotel. Two additional dependent variables include how likely the scent is to contribute to the overall atmosphere of the hotel, and how likely it was that the respondents would consider purchasing the scent as a home or office fragrance. The four factor variables were the independent variables of the model. The reason for using factor scores was to avoid the multi-collinearity effect of the model due to the possibility of high correlations among variables.

Table 4 gives the results of analyzing two factors to explain how much the respondents' experience with the scent influences their feelings about the hotel's overall atmosphere. Factor II (sensuality) had the greatest impact ( $p < .001$ ), followed by Factor I (happiness and delight). Consistent with this relationship, these two factor variables are also positively associated with overall satisfaction ( $p < .001$ ), while "unpleasant feelings", as the additional item, has a negative (inverse) influence ( $p < .05$ ). Having said that, as expected, those scent items associated both with happiness and delight and with sensuality are closely associated with creating positive feelings regarding the overall atmosphere and visitor satisfaction. On the other hand, any negative (unpleasant) feelings about the scent used in the hotel facilities are likely to create more intense dissatisfaction with the visitors' stay at the hotel.

\*\*\* Please insert Table 4 about here \*\*\*

Moreover, in an attempt to establish similar associations with the visitors' future behavioral intentions, these two factor labels have a similar influence on how the respondents' experience with the scent makes them feel loyal to the hotel brand ( $p < .001$ ), become motivated to revisit the same hotel in the future ( $p < .001$ ), and wish to purchase the scent as a home or office fragrance ( $p < .001$ ). In summary, "happiness and delight" and "sensuality" are the most dominant responses to the hotel scent and most influence visitors' emotions. However, the stimuli of "hunger and memories" have no significant influence on either

visitors' perceptions of overall atmosphere and satisfaction, or their future behavioral intentions.

In addition, Table 4 indicates that how the scent is perceived is more likely to affect how the respondents feel about the hotel's overall atmosphere (6.33), their overall satisfaction with their stay at the hotel (6.16), and their motivations to visit the hotel again (5.65). Conversely, two additional dependent variables — respondents' intentions of loyalty to the same brand (5.00), and their willingness to purchase the scent as a fragrance (4.86) — have received relatively lower mean scores. Based on these findings, it can be argued that the scent has a greater influence on the hotel guests' overall perceptions of the atmosphere, satisfaction and repeat visit intentions, but they are not highly motivated to keep their loyalty to the same brand in other cities nor to buy the scent as a fragrance.

In responding to the open-ended question about the scent, most participants simply stated whether or not they liked the scent. The most frequently used words to describe their feelings are “strong”, “refreshing,” and “intense.” A number of the respondents who identified themselves as “allergic” mentioned that they do not like the hotel-scent trend. About 10 percent of the respondents — who happen to all be females — indicated their intention to buy the scent to use as a home or office fragrance. Not all of the participants responded to the open-ended question, but some of the comments made are worth mentioning. Not all of the written comments are given here, due to the large sample size. But as an example, one male participant (age 46–55 and from Sweden) commented that he liked everything in the hotel, especially club lounges but he hated the hotel perfume and it gave him headaches. A female participant (age 46–55 and from Spain) mentioned that she liked the scent but it was too strong and intense. Another female participant (age 36–45 and from the USA) found the scent very distinct and too artificial. As a contrast, one female respondent (age 56–65 and from

India) asked where she could buy the scent, and mentioned that all of her family liked the scent very much. A female respondent from the UK (age 26–35) stated that when she entered the lobby in Hong Kong she recalled her experience in the same hotel chain in London, which was a very pleasant and welcoming feeling. A male respondent from China (age 36–45) told us that he is a loyal customer of the hotel and he loves everything about it, including the scent.

## **5. Conclusion and Implications**

As more and more hotel companies around the world utilize scent, an understanding of the effectiveness of scent becomes a priority for hotel industry authorities. To the authors' best knowledge, this study is the first attempt to enhance our understanding of the different emotional states evoked by hotel scents. This study opens the door for hospitality researchers to conduct more research in relation to ambient scent, to improve our understanding of how hotel signature scent makes customers feel and to what extent these feelings can be associated with improving the levels of customer satisfaction and loyalty.

This study has several important implications for hotel industry professionals as well as for researchers. First, as expected, the most preferred locations to diffuse ambient scent are the hotel lobby, the restrooms and the corridors. The locations where hotels should refrain from diffusing scent are the guest rooms, the function spaces, and the food and beverage outlets. One important issue that is worth mentioning is that even in the lobby, where participants scored highest, the intensity rating of the scent is only 6.15 out of 10, where 1 refers to “not at all intense” and 10 refers to “extremely intense”. Conversely, the restaurant has a lower intensity rating of 3.18. Overall, the intensity ratings vary between 6.15 and 3.18. This sends a clear message to the hotel industry in terms of the way they pipe the scent through the hotel via the central air-conditioning system, and how much scent they use when doing so. As

indicated by some of the customer comments, the scent used in the hotel lobby can be too strong for their taste, to the point that it becomes overwhelming to their senses and starts negatively influencing their overall hotel experience.

Second, our study shows that “happiness and delight” along with “sensuality” account for 51 percent of the intensity of emotional states evoked by hotel scent. These feelings are most likely to be in line with the hotel’s intentions. About 10 percent of the variance in the intensity of the emotional states evoked by hotel scent is explained by stimuli of “hunger and memories” and “unpleasant feelings.” This means that there is still around 49 percent of the variance unaccounted for after the factor analysis using the EOS scale. This indicates a need for developing a scale for ambient scents, and, if possible, one specifically designed for hotel scents. Although the EOS scale was the most suitable option available to us for the purpose of this study, it was not developed for ambient scents.

Third, “happiness and delight” along with “sensuality” are the most dominant emotions evoked by the hotel scent. Our preliminary analysis shows that these emotions are positively associated with the respondents’ future intentions, including their feelings regarding the hotel’s overall atmosphere, their satisfaction with their stay at the hotel, their sense of loyalty to the brand, their motivation to visit the hotel again, and their willingness to purchase the scent as a home or office fragrance. However, relatively lower mean scores for two items indicate that they are not very likely to purchase the scent as a home or office fragrance, and that their experience with the scent is not very likely to make them loyal to the hotel brand.

Fourth, to our knowledge this is the first study conducted about hotel scent as a part of atmospherics evaluation. Hotel scent is an important atmospheric element that has been neglected in the hospitality field compared to other atmospheric elements, such as music, light, color, and design, as previously suggested in the literature review (e.g. Ariffin, Bibon,

& Abdullah, 2012; Hirsch, 1995; Liu & Jang, 2009). The findings of this study shed light on the way ambient scent is used by the hotel industry, and open the door for further research in this area.

The study also presents implications for experiential marketing. With their seminal book *The Experience Economy*, Pine and Gilmore (1998) established the benchmark in service marketing by suggesting that businesses should focus on creating memorable events for their customers, and that memory itself should become the product — the “experience”. In today’s rapidly changing environment, consumers are both rational and emotional human beings who are concerned with achieving pleasurable experiences (Schmitt, 2003). Thus, the consumer experience is not only created through interaction with suppliers; interaction among other consumers in a pleasant atmosphere also is a major factor in creating experiences. As a direct consequence of this, the early millennium has witnessed a new term in tourism, “experiential marketing”, which refers to creating direct and valuable connections between organizations and their guests by using voices or sensory experiences to create satisfaction by triggering positive emotions (Lenderman, 2006). Among the reasons for establishing the rules of experiential marketing are building relationships with customers, raising the awareness of customers, increasing customer loyalty, stimulating positive word-of-mouth, changing the minds of dissatisfied customers, and increasing the return on marketing investment. As it is about to become an important element of the hotels’ products and services in today’s revolving hospitality industry, hotel scents can also be closely related to the objectives of experiential marketing. For instance, using ambient scent at the premises of hotel businesses may be a valuable means of creating memorable experiences for guests and maintaining brand loyalty.



Although the findings provide many insights into the connections between different emotional states evoked by the hotel scents and how hotel businesses can make use of the emotional response by their guests, there are still many unanswered questions that could be explored in future research. For instance, the scale used in this research is not specifically developed for hotel scents. Future research can focus on developing a scale simply for the benefit of hotel scents. It would be interesting to conduct a study among hotel customers that examines whether they are able to match the hotel brand name with its signature scent. Of course, any sample for such a study should include hotel customers who have experience of all of the hotel brands included in the study. Future research may also consider how to benefit from the findings of similar studies in the context of market segmentation, by making comparison with visitors' demographic and travel experience characteristics.

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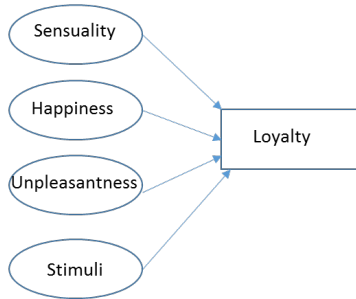
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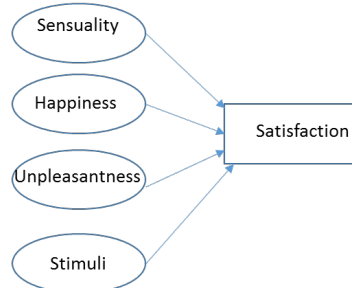
# Figures

## Figure 1. Conceptual background

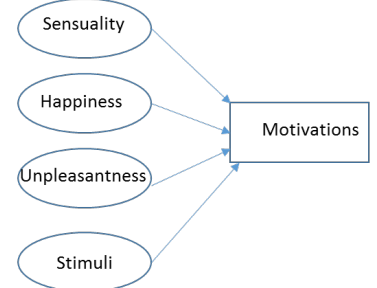
H1 Happiness, unpleasant feelings, sensuality, and stimuli influence perceived guest loyalty



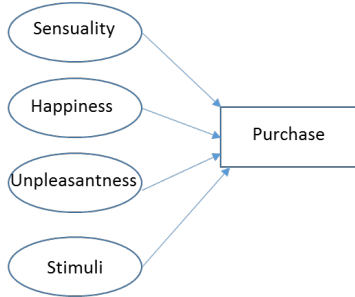
H2 Happiness, unpleasant feelings, sensuality, and stimuli influence perceived guest satisfaction



H3 Happiness, unpleasant feelings, sensuality, and stimuli influence guest motivations



H4 Happiness, unpleasant feelings, sensuality, and stimuli influence guests' intentions to purchase the scent.



H5 Happiness, unpleasant feelings, sensuality, and stimuli influence the contribution of the scent to the overall atmosphere of the hotel.

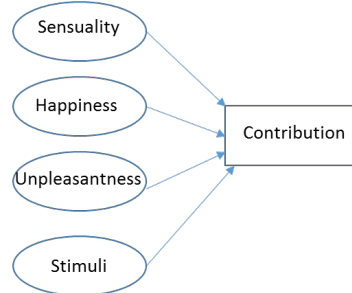
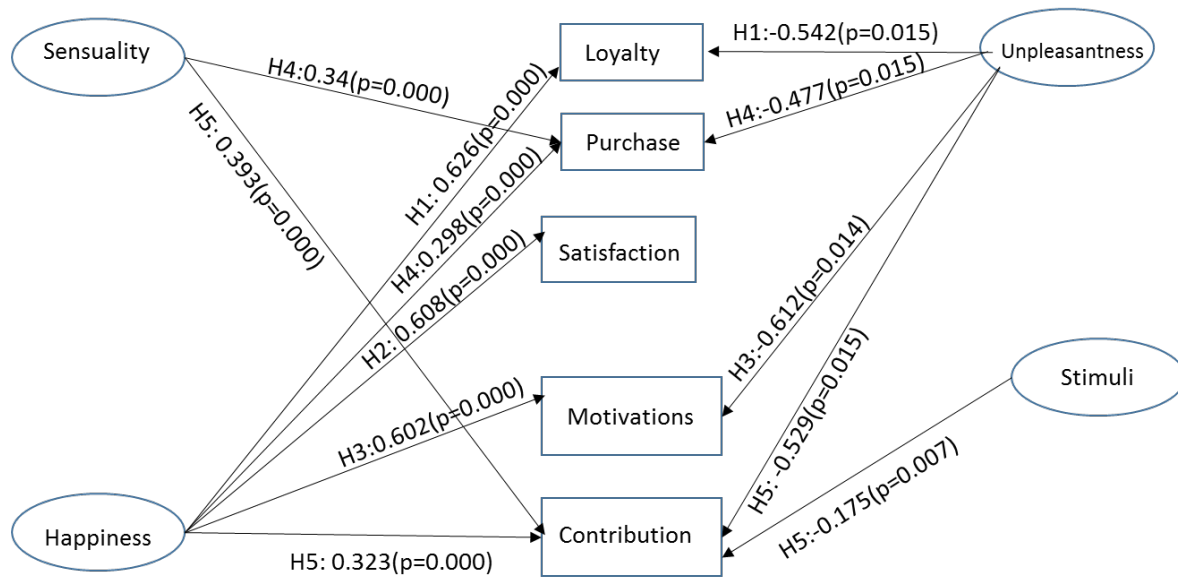


Figure 2 Standardized estimates for the models



	CMIN	DF	P	CMIN/DF	RMSEA	CFI	AGFI	GFI
<b>SEM</b>	763.6	35	0	2.176	0.058	0.861	0.827	0.933

Table 1. Results of factor analysis

<i>Factor</i>	<i>Mean</i>	<i>Factor Loading</i>	<i>Eigenvalue</i>	<i>Variance explained</i>	<i>F Ratio</i>	<i>Alpha</i>	<i>P</i>
<b>Factor I: Happiness</b>	<b>4.40</b>		<b>10.806</b>	<b>45.026</b>	<b>20.108</b>	<b>.926</b>	<b>.000</b>
1. Relaxed	5.75	.730					
2. Comfort	5.28	.686					
3. Well-being	5.54	.684					
4. Romantic	4.77	.679					
5. Desire	3.78	.668					
6. Energetic	4.53	.652					
7. Happy	5.79	.697					
8. Nostalgic	3.69	.648					
9. Refreshed	5.85	.606					
10. Interesting	4.63	.685					
11. Spiritual	3.46	.559					
<b>Factor II: Sensuality</b>	<b>4.52</b>		<b>2.622</b>	<b>10.925</b>	<b>35.717</b>	<b>.881</b>	<b>.000</b>
1. Revitalized	5.08	.789					
2. Soothed	4.88	.745					
3. Sensual	4.35	.730					
4. Pleasantly surprised	5.36	.689					
5. Impressed	5.34	.539					
<b>Factor III: Stimuli of hunger and memories</b>	<b>2.44</b>		<b>1.388</b>	<b>5.784</b>	<b>21.182</b>	<b>.817</b>	<b>.000</b>
1. Famished	2.35	.796					
2. Melancholic	2.34	.748					
3. Thirsty	2.20	.709					
4. Mouthwatering	2.70	.618					
5. Amusing	3.23	.610					
<b>Factor IV: Unpleasant feelings</b>	<b>2.21</b>		<b>.971</b>	<b>4.045</b>	<b>13.572</b>	<b>.700</b>	<b>.000</b>
1. Irritation	2.70	.861					
2. Disgust	2.67	.772					
3. Sadness	1.85	.668					

Kaiser–Meyer–Olkin Measure of Sampling Adequacy = .931

Table 2. Confirmatory factor analysis

			Standard Estimates	S.E.	C.R.	P
Comfort	←	Happiness	0.78			
Well-being	←	Happiness	0.779	0.076	13.325	***
Energetic	←	Happiness	0.758	0.07	12.885	***
Happy	←	Happiness	0.854	0.078	14.976	***
Refreshed	←	Happiness	0.74	0.076	12.500	***
Interesting	←	Happiness	0.769	0.076	13.100	***
Spiritual	←	Happiness	0.551	0.075	8.878	***
Impressed	←	Happiness	0.524	0.08	8.395	***
Disgust	←	Unpleasant	0.545			
Irritated	←	Unpleasant	0.865	0.227	6.871	***
Sad	←	Unpleasant	0.684	0.123	7.333	***
Sensual	←	Sensuality	0.732			
Soothed	←	Sensuality	0.808	0.09	12.565	***
Pleasantly surprised	←	Sensuality	0.822	0.096	12.790	***
Revitalized	←	Sensuality	0.856	0.093	13.319	***
Amused	←	Stimuli	0.786			
Melancholic	←	Stimuli	0.59	0.066	8.618	***
Nostalgic	←	Stimuli	0.687	0.094	9.996	***



Table 3. Convergent and discriminant validity and measurement fits

	<b>CR</b>	<b>AVE</b>	<b>MSV</b>	<b>ASV</b>	<b>Sensuality</b>	<b>Happiness</b>	<b>Unpleasantness</b>	<b>Stimuli</b>
<b>Sensuality</b>	0.881	0.649	0.885	0.423	0.806			
<b>Happiness</b>	0.898	0.530	0.885	0.481	0.886	0.828		
<b>Unpleasantness</b>	0.747	0.504	0.085	0.040	0.149	0.111	0.710	
<b>Stimuli</b>	0.732	0.579	0.746	0.398	0.680	0.804	0.292	0.792

Table 4. Fits of the confirmatory factorial model and of the structural equation models

	<b>CMIN</b>	<b>DF</b>	<b>P</b>	<b>CMIN/DF</b>	<b>RMSEA</b>	<b>CFI</b>	<b>AGFI</b>	<b>GFI</b>
<b>CFA</b>	335.059	129	0	2.597	0.050	0.916	0.876	0.979
<b>SEM</b>	763.6	35	0	2.176	0.058	0.861	0.827	0.933