

## **The Scent of a Successful Venue: (In) Congruent Scent and Consumer Attitude towards a Café**

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### **Abstract**

*The purpose of this study is to test the effect of (in) congruent added scents on consumer attitude towards a café facility. It is proposed that adding a congruent scent in a café has a positive effect on consumers' attitudes towards the café and that adding an incongruent scent has a negative effect on consumers' attitudes towards the café. The hypotheses were tested through t-test for independent samples on 209 respondents. The results show that adding an (in)congruent scent in a café does not have a statistically significant impact on attitudes towards the café – with the exception of a statistically significant positive effect of congruent scent on attitudes among women towards the café. Managers may want to consider deploying congruent scent specifically with women in mind.*

**Keywords:** Incongruent scent, Congruent scent, Attitude, Sensory marketing, Café, Gender

### **1. Introduction**

The concept of sensory marketing can be defined as “marketing that engages the consumers’ senses and affects their perception, judgment and behavior” (Krishna, 2012, p. 332). Certainly, sensory marketing concerns not only the shopping-environment but also the consumers themselves and their buying experience. The senses affect humans in social, emotional and physical ways (Krishna, 2012). At a basic level, a facility can differentiate itself from others by providing a more pleasant and exciting atmosphere for the customer than its competitors (Morrison, Gan, Dubelaar, & Oppewal, 2011), which can be achieved through appealing to the customer’s senses. Increasing focus has been turned to human senses in various marketing settings (Lee, Heere, & Kyu-soo, 2013) (cf. Hall, 2013; Lindstrom, 2005; Wyrley-Birch, 2013) and the attention on scent reflect this attention.

Throughout history scents have been used in various settings to influence consumers’ satisfaction and buying behaviour. Nowadays, with modern technology, it is possible to use a wider range of scents in the market environment. Some scents may be synthetic, that is they are manufactured, whereas natural scents are produced by nature or without human interference (Bosmans, 2006). Certainly, research has found that olfactory cues in the environment influence consumer response (e.g. Bone & Ellen, 1999; Chebat & Michon, 2003; Mattila & Wirtz, 2001; Morrin & Ratneshwar, 2000; E. Spangenberg, Crowley, & Henderson, 1996). For example, when a mix of certain music and vanilla scent were combined, it was shown that both the sound and scent had a positive impact on the consumers’ emotions and satisfaction, as well as on the consumers’ shopping behaviour, i.e. time and money spent (Morrison et al., 2011). Grocery stores and coffee shops have been known to deploy scents such as freshly baked bread and ground coffee (Mitchell, Kahn, & Knasko, 1995). Likewise, British Airways uses an artificial scent called Meadow Grass in their business lounges in an effort to promote relaxation (Bosmans, 2006). Several luxury hotel chains have scents developed exclusively for them.

They hope that the scent will contribute to the customers' recall of the pleasurable experiences of the hotel as well as to customers' desire to return (Krishna, 2012).

Ambient scent, that is a scent not originating from a specific object but available in the environment (E. Spangenberg et al., 1996) can be found in places such as retail stores (Helmsley, 1997) and office buildings (Marsh, 1998). Companies can, when working with their brands' image and identity, include the use of ambient scent (Hultén, 2011). Ambient scents can "contribute to creating memory pictures, a positive atmosphere and well-being among both customers and employees" (Hultén, 2011, p. 266). If such sensory stimuli is handled effectively, it can yield positive effects such as less dwell time and more money spent. However constructing an environment focused on enhancing customers' experience by using scent is not easy (Soars, 2009).

While the sense of smell and the presence of a scent undoubtedly have an influence on the behaviour of humans (Morris & Ratneshwar, 2000), and a certain combination of sensory stimuli can "calm, relax, de-stress, energise, improve mood, influence decision-making and hence the propensity to spend" (Soars, 2009, p. 286), it is unclear specifically how scent influences humans in terms of such alterations; the mechanisms of cause and effect are not clear (Bone & Ellen, 1999; Chebat & Michon, 2003; Ehrlichman & Halpern, 1988; Knasko, 1992). Researchers have often stated that an agreeable scent positively influences people's spirit and emotional state (Orth & Bourrain, 2005). Indeed, alteration in the human spirit and emotional state are the most frequently proposed results of scent (Baron, 1990; De Bono, 1992; Ehrlichman & Halpern, 1988; Knasko, 1992; Ludvigson & Rottman, 1989). In terms of attitude, which is a concept usually considered to consist of the elements *affect*, *behaviour* and *cognition*, alteration in the human spirit and emotional state may imply that scents have a special influence on the affective element (Breckler, 1984). But in several studies the connection between scent and emotion remains unclear (Bone & Ellen, 1999; Ehrlichman & Halpern, 1988; Knasko, 1992), and the relationship can be questioned (Chebat & Michon, 2003). Studies in general on the more recognized effects of scent (e.g. Bone & Ellen, 1999; Chebat & Michon, 2003; Mattila & Wirtz, 2001; Morris & Ratneshwar, 2000; E. Spangenberg et al., 1996) acknowledge its effect on the other two elements of attitude - behaviour (e.g. actions towards an attitude object) (MacKenzie & Lutz, 1989) and cognition (e.g. beliefs and thoughts) (Breckler, 1984).

Research on scent has mainly focused on the effectiveness of ambient scent in retail stores (Guéguen & Petr, 2006; Hirsch, 1992; Knasko, 1992; Mattila & Wirtz, 2001) and shopping malls (Chebat & Michon, 2003; Michon, Chebat, & Turley, 2005). Indeed, it has been noted that the lack and limitations of empirical investigations warrant further studies in other settings than retail and specifically regarding gender differences and scent congruity (E. Spangenberg et al., 1996). In fact, the matter of congruity may shed light on the mechanisms of cause and effect when scent influences humans. It has been put forward that congruity, the harmony among scents and artefacts, may influence consumers' responses (Bone & Jantrania, 1992; Gulas & Bloch, 1995). Moreover, in previous research on retail environments, scent has often been added to a relatively scent-free environment. In some environments however, such as a café, ambient scents may already exist (e.g. coffee and cakes), which makes it interesting to explore the potential for adding additional scents (cf. Guéguen & Petr, 2006). Consequently, this study tests the effect of (in)congruent added scents on consumer attitude towards a café facility.

## 2. Theory and Hypotheses

Managers who find themselves in a market with increasing competition seek to distinguish their offerings through differentiating themselves from the offerings of competitors (Morrison et al., 2011). To be different, establishments can offer an atmosphere which is tailor-made with the target customers' needs or wants in mind. Offering an atmosphere implies not merely considering products or services, convenience and pricing, but supplying a pleasant and thrilling shopping environment (Baker, Levy, & Grewal, 1992; Dawson, Bloch, & Ridgway, 1990; Sherman, Mathur, & Smith, 1997; Sherman & Smith, 1987; Tai & Fung, 1997).

Of course, sensory inputs have an impact on customers' perception of services and products (Almeida e Silva, Okimoto, & Tanure, 2012; d'Astous & Kamau, 2010). A sensory expression can be characterized as something that triggers an experience. It can make a brand identity more clear and leave an impression in a customer's mind. Indeed, sensory strategies aim to differentiate a product or service in terms of a customer's perception of it (Hultén, 2011). By using a specific scent, a pleasant atmosphere can be created which in turn can bring forth and enhance memories (Hultén, 2011; Morris & Ratneshwar, 2000, 2003). In addition, scents affect the mood and the emotions of the customer (Orth & Bourrain, 2005).

For example, Volvo puts a lot of effort into making their cars smell good. When entering the car, the movement of the doors actually ensures that air is sucked out so potential plastic odors are ventilated. Other well-known examples include retailers who deploy pleasant natural scents associated with, for example, bakery, fruit and cheese in their establishments. Indeed, if the use of a scent is managed properly, it can be associated with and strengthen a brand through both recognition and recall of the signature fragrance (Hultén, 2011).

Certainly, scents have to be perceived for them to influence consumer behaviour. The degree to which a scent is present in an environment and the sharpness of the scent is one aspect of such perception. But for a consumer to have the ability to sense a scent is not the same thing as for the consumer to be able to identify a certain scent (Gulas & Bloch, 1995). Previous research has proposed that scents are first perceived on the basis of their relative pleasantness and unpleasantness (Ehrlichman & Halpern, 1988; E. Spangenberg et al., 1996) or in terms of like and dislike (Bosmans, 2006; Ehrlichman & Halpern, 1988). Scents are often perceived without the person perceiving the scent being able to specifically name the scent or pinpointing the source of the scent. Moreover, there are individual differences in our abilities to perceive and classify scents. It has been found that women are systematically better than men at recognizing scents. In addition, factors such as (old) age, illness, and smoking are associated with a decrease in the ability to recognize scents (Gulas & Bloch, 1995).

Scents are further judged based on factors such as intensity, quality (Bone & Ellen, 1999) and the ability to arouse, where the latter refers to how probable it is that a physiological response is elicited (E. Spangenberg et al., 1996). Generally, when scent intensity is increased, the scent is perceived as less pleasant. That is, a scent presented in low intensity can be perceived as pleasant but the same scent presented in high intensity can be perceived as very unpleasant (Henion, 1971; Richardson & Zucco, 1989). Turning attention to quality, it has been noted how quality is connected to the emotional feelings a scent elicits. The more a scent is agreeable and likeable, the greater the favourable influence on moods and evaluations - and vice versa for a disagreeable odour (Bone & Ellen, 1999).

The view that attitudes consist of affective, behavioural and cognitive elements is widespread, especially within marketing (Breckler, 1984; Eagly & Chaiken, 1993; Ford & Smith, 1987): Affect is an emotional response founded on emotional preferences or experiences (Kwon & Vogt, 2010). Behaviour consists of actions or behavioural intentions. In contrast, the cognitive element is composed of beliefs or knowledge constructions based on perceptions and thoughts (Breckler, 1984). In a market environment the affective element can be the consequence of favourable or unfavourable experiences from interacting with a facility (Derbaix & Pham, 1991). Affect may vary between positive (e.g. pleasant, cheerful and happy) to negative (e.g. dissatisfied, saddened, angry) (Breckler, 1984; Kwon & Vogt, 2010). Individuals who have favourable affect responses resulting from experiences with a facility are more likely to deem that facility adequate, and vice versa for negative experiences (Eagly & Chaiken, 1993; R. L. Oliver, 1993; R. L. Oliver, 1980; Westbrook, 1987). A shopper, who for instance, comes across a scent of flowers that matches his/her scent preferences, might exhibit a positive effect in his/her mood. An emotional reaction to a scent is considered very likely due to the physical character of the sense of smell (cf. Gulas & Bloch, 1995). In fact, the sense of smell is different compared to sight and hearing in that the stimuli inputs from scents enter a specific part of the brain in a more direct manner (Gibbons, 1986; Stoddart, 1988).

The behavioural element of attitude reflects the actions that individuals display towards an attitude object (Eagly & Chaiken, 1993; MacKenzie & Lutz, 1989). While it has been argued that attitudes stem from previous experiences (Eagly & Chaiken, 1993), attitudes may also stem from past behaviours; i.e. behaviour may precede the attitude, and the latter may be formed to conform to one's own behaviour (to achieve homeostasis) (Kwon & Vogt, 2010). As with affect, both the behaviour and cognition elements may vary between positive (e.g. preservation and defending) and negative (e.g. rejecting, ruining) dispositions (Breckler, 1984). Scents demand little to no mental effort to experience (Ehrlichman & Halpern, 1988), which implies that the effect of scents on attitude may also require little mental effort. For example, it has been noted how breathing becomes deeper when one is surrounded by a pleasant scent. In contrast, when surrounded by a nasty smell, breathing may at least temporarily stop altogether (Bone & Ellen, 1999). Put differently, scent may lead to either an approach reaction or to an avoidance reaction (Bitner, 1992; Bone & Ellen, 1999; Gulas & Bloch, 1995).

Certainly, the atmosphere of a facility such as a café has many elements and features other than scent that can influence the degree of responses that would be elicited from scent alone.

For instance, the influence of an agreeable scent that promotes pleasant memories may be enhanced if agreeable background music that also promotes pleasant memories is played. In this way synergies may be achieved. Indeed, it is unlikely that an agreeable scent would overcome the effects of an environment which is hot, comfortless, loud, badly lit and so on (Gulas & Bloch, 1995).

Some scents, even if they are agreeable by themselves, may not be suitable in a specific atmosphere (or together with specific additional atmospheric elements) (Bone & Ellen, 1999). For instance, a flowery smell, which on its own may be considered agreeable, can be perceived as unfitting for a motorcycle dealership. If it is unfitting it will not evoke any favourable effects on attitudes (Bone & Ellen, 1999; Gulas & Bloch, 1995). It has been proposed that congruity influences the influence of scents (Bone & Jantrania, 1992; Gulas & Bloch, 1995). Specifically, congruity between a scent and a product or service sold can lead to positive results (E. R. Spangenberg, Sprott, Grohmann, & Tracy, 2006). It has been noted that when there is no congruity, attitude formations may be hampered and customers may be left confused (Bone & Ellen, 1999). In contrast, when there is congruity between a scent and a product sold, it can aid the customer's attempts to draw conclusions and making sense of the situation (Mitchell et al., 1995). A product can be presented together with a scent that is congruent with the product (e.g. coconut sunscreen and lemon cleaner) and hence the product can attain more positive customer evaluations compared to a product presented together with an incongruent smell (e.g. lemon sunscreen and coconut cleaner) (Bone & Jantrania, 1992). In contrast, incongruent scents may include competing scents originating from different kinds of prepared food in a supermarket (Mitchell et al., 1995). For example, the scent of barbecued ribs may not be congruent with green-salads. In particular, congruity enhances information processing (Mitchell et al., 1995), improves product assessments (Bone & Jantrania, 1992) and influences decision making behaviour.

It has been noted that few studies have investigated the effects of congruity per se. Results are frequently not the outcome of a congruent scent enhancing assessments of an environment; rather they are often the outcome of the disadvantageous influences from an incongruent scent (Bone & Ellen, 1999). As mentioned, it has been found, however, that a well-matched (congruent) condition brings more positive consumer evaluations compared to the no-scent control or poorer-fit (incongruent) scent (Bone & Ellen, 1999; Bone & Jantrania, 1992). A congruent environment may lead to more time spent in the environment, but also less variability in the search for information, more brand swapping and more consumers selecting a lower quality brand (Mitchell et al., 1995). In contrast, in-congruent environments have been shown to result in fewer descriptions (less use of metaphorical language) (Wolpin & Weinstein, 1983) and poorer ad evaluations (cf. Bone & Ellen, 1999). In fact, research suggests that humans generally and whenever possible prefer congruency and avoid incongruence or irregularity (cf. e.g. E. Spangenberg, Grohmann, & Tracy, 2004). Consequently, the above sanctions the specification of the following hypotheses:

H1: Added congruent scent has a positive effect on consumers' attitude towards a café

H2: Added incongruent scent has a negative effect on consumers' attitude towards a café

Even if large variances exist between humans with regard to scent preferences, some patterns can be discerned (Gulas & Bloch, 1995). It has been observed that certain scents are regarded as unpleasant all over the world. For example, the scents of decaying vegetation, spoiled milk, and skunk secretions are universally perceived by humans as unpleasant. When faced with these kinds of odours, our disgust and avoidance protects us from disease or risk. In contrast, floral scents seem to almost always be perceived as agreeable across human cultures and individuals (Moncrief, 1970). It has been observed how newborn babies make facial expressions of delight when around agreeable food related scents, which implies that some scent preferences are hereditary (cf. Gulas & Bloch, 1995).

Results suggest that scent preferences may differ across age, gender, and across generations (Hirsch, 1992). However, even if some scent preferences have physiological roots, there are also those preferences that stem from previous personal experiences or associations with certain scents (Gulas & Bloch, 1995). A scent may be viewed as a conditioned stimulus and associations or memories connected to the scent may outlast other forms of memory associations (Kirk-Smith, Van Toller, & Dodd, 1983). In fact, the associations a scent carries frequently turn into a strong experience-reminder that persists for many years (Richardson & Zucco, 1989). For instance, a person might have a great favourable preference for the scent of strawberry cake because of memory associations with several pleasurable birthdays. In this way shared past experiences may assist in explaining some age and gender variations in scent preferences (Gulas & Bloch, 1995).

Compared to men, women are more responsive to some scents and possess better capabilities to distinguish scents (Wysocki & Gilbert, 1989). Indeed, women and men do not respond to the same olfactory cues (Gustavson, Dawson, & Bonett, 1987; Jacob & McClintock, 2000; Wysocki & Gilbert, 1989). Research has shown that some scents may be more suitable for women because they are perceived as feminine and others are unsuitable because they are perceived as masculine. Several department shops divide their offerings by gender, with women's merchandise in one section (or level) and men's merchandise in another. Thus, it may be possible to differentiate the atmospheres by implementing gender-congruent scents in the different gender-specific areas in the sections or departments (E. R. Spangenberg et al., 2006).

As it has been observed that women are more sensitive to scents, it can be argued that gender moderates the impact of scent on consumers (cf. Bone & Ellen, 1999). It has accordingly been contended that gender should play a part as scent theory is further developed (Bone & Ellen, 1999). In fact, women appear to be more informed by scents (Dalton, Doolittle, & Breslin, 2002), which in turn may shed light on why women exhibit less tolerance with regard to unpleasant scents than men (Nordin, Broman, Olofsson, & Wulff, 2004). In some studies, verbal reports from respondents have been collected and it has been found that women report scents as being more important, both as scents per se and relative to other senses (Havlicek et al., 2008; Herz & Inzlicht, 2002). Indeed, with regard to emotional reactions to scents, women more often than men state that they have recalled emotional memories as well as experienced powerful moods of happiness, sadness, well-being and a decrease of stress as a result of scents (Martin, Apena, Chaudry, Mulligan, & Nixon, 2001). However, and as mentioned, incongruent scents have been associated with poorer evaluations (cf. Bone & Ellen, 1999) and humans generally prefer congruency and avoid incongruence (cf. e.g. E. Spangenberg et al., 2004), which allows us to assume that the proposed link with attitude applies to both sexes, consequently:

H<sub>3</sub>: Added congruent scent has a positive effect on women's attitudes towards a café.

H<sub>4</sub>: Added incongruent scent has a negative effect on women's attitudes towards a café.

H<sub>5</sub>: Added congruent scent has a positive effect on men's attitudes towards a café.

H<sub>6</sub>: Added incongruent scent has a negative effect on men's attitudes towards a café.

### **3. Method**

The study was conducted in two stages. In the first stage two focus groups were performed to specify the independent variables in terms of congruence. That is, the scents to be deployed in the café were identified. In the second stage the experiment was performed to test the hypotheses. Respondents' attitudes were assessed under control and experiment conditions respectively. The data was collected in a café in Sweden over a period of 15 days.

#### **Measures**

##### **In/congruent Scents**

As mentioned, to specify the independent variables in terms of (in) congruence, two focus groups were performed. Each focus group consisted of six participants. A focus group usually consists of six to ten individuals (Morgan, 1998)- groups with more than eight individuals get harder to handle (Blackburn & Stokes, 2000). The samples were drawn out of convenience among consumers who frequent cafés, resulting in a mix of both men and women. As suggested by Sagoe (2012), amongst others, the focus groups sessions were recorded, enabling the discussion to be replayed and hence more attention to be given to the focus group there and then, in turn resulting in a better flow during the sessions without interrupting the participants for taking notes. However, as a safety measure, one scholar took basic notes during the discussion and observed the session while another took the role of the moderator.

Both focus groups were conducted in a semi-structured manner; a template was used as a general guideline when the focus topics were introduced. The discussion was moderated when it strayed too far from the focus topics (cf. Christensen, Engdahl, Gräas, & Haglund, 2010). Specifically, some major topics were chosen that the participants could discuss quite freely. In addition, a blind test was performed: The participants were instructed to smell various scented candles. The scents included lavender, vanilla, coffee, magnolia and fresh linen. Vanilla and coffee were included as they were considered to be good candidates to be perceived as congruent to a café setting. In contrast, fresh linen was included as it was considered to be a good candidate to be perceived as incongruent to a café.

Intuitively, the scent of something freshly laundered appears congruent to a shirt retailer rather than to a café. Likewise, magnolia and lavender was included as a possible incongruent but pleasant flower scents. In addition, the latter scent was included as it is believed to make restaurant guests more relaxed (cf. Guéguen & Petr, 2006).

Each candle was concealed in a fabric bag to conceal the colour of the candle that otherwise could have given clues concerning the scent, i.e. tainting the results. Participants were asked if they could name the scent, to elaborate on the quality and intensity of it, what kind of associations it evoked, and what kind of feelings it evoked. Later the candles were lit one at a time and the same questions were asked again. In the discussion that followed the participants were first and foremost probed about what kind of scents are (in) congruent in cafés. Table 1 summarizes the key findings. Vanilla was indeed considered to be clearly congruent and fresh linen was indeed considered to be clearly incongruent to cafés. Magnolia and lavender were also considered to be congruent with cafés, but specifically to old-style cafés (these scents were also to some degree and by some respondents considered to be incongruent to cafés). In addition, coffee was, to some extent, considered to be congruent, but the scent of coffee troublesome to perceive and identify, thus it was not included as an independent variable. In sum, the congruent scent vanilla and the incongruent scent fresh linen were deployed as congruent and incongruent independent variables respectively.

**Table 1: Focus Group Results**

Type of Scent	Description	Associations
Lavender	Fresh, pleasant, risk of getting tired of it, special scent, intense, calming, harmony	Soap, chai latte, tea, lavender, flowers, library, spring/summer, buns, washing powder, female, potpourri
Vanilla	Unpleasant, nausea, pleasant, more sticky than lavender, cosy feeling, calm, too sweet, common scent, safety	Vanilla, soap, vanilla tea, baking, soft, bedroom, ice-cream
Magnolia	Fresh and fruity, clean, spice, pleasant, not that strong, the best so far, a bit more sticky than lavender and vanilla	Soap, lip balm, apple, a sunny summer day, bathroom, washing powder
Fresh Linen	Clean and fresh, similar to magnolia, fruity, less synthetic, less pleasant, too strong	Citrus, washing powder, soap, air cleaner, cleaning product, chewing gum
Coffee	Less strong than fresh linen, quite pleasant, a bit more flowerlike than the others, not too intense, positive	Dried roses, cookies, cinnamon, cacao, coffee

### Attitude

To assess attitudes towards the café, an instrument was developed. As mentioned, the understanding that attitudes contain affective, behavioural and cognitive elements is common (Breckler, 1984; Eagly & Chaiken, 1993; Ford & Smith, 1987). Accordingly, items were devised to match each of these elements. Specifically, nine questions were constructed: three assessing affect, three assessing behaviour and three assessing cognition. See Table 2. It is considered optimal to use between five to nine options for each question (Ebel, 1969). Options should be given each a number and be ordered from low to high (Spector, 1992). Consequently, a Likert-scale with a range from 1-7 was deployed. Considering the length and the readability of the questionnaire (cf. Gray, 2009; Spector, 1992), preliminary items were advanced. The preliminary items were pre-tested on, in total, 12 individual respondents and submitted to an expert in questionnaire development for revision. After final revisions, a small pilot study with five respondents (who were encouraged to report any trouble completing or understanding the items) was deployed to ensure that the final version was adequate. Since the survey was conducted in Swedish, Table 1 has been translated from Swedish into English.

**Table 2: Operationalization Attitude**

Theoretical Definition		Empirical Definition	
Second order	First order	Items	Scale
Attitude - "In discussions of the attitude concept, it is very common to identify three attitude components: affect, behavior, and cognition" (Breckler, 1984, p. 1191)	Affect - "Affect can vary from pleasurable (feeling good, happy) to unpleasurable (feeling bad, unhappy)." (Breckler, 1984, p. 1191)	1. Is the café visit today?	Unpleasant/Pleasant
		2. How does today's visit make me feel?	Unsatisfied/Satisfied
		3. Does the café have a nice atmosphere?	Strongly disagree/ agree
	Behaviour - "Behavior can range from favorable and supportive (e.g., keeping, protecting) to unfavorable and hostile (e.g., discarding, destroying)." (Breckler, 1984, p. 1191)	4. Will you revisit to this café after today's visit?	Very unlikely/ likely
		5. Would you recommend this café to others after today's visit?	Very unlikely/ likely
		6. Do you spend more money in cafés with this kind of atmosphere than other kind of cafés?	Strongly disagree/ agree
	Cognition - "...cognitions or thoughts may vary from favorable to unfavorable (e.g., supporting versus derogating arguments)." (Breckler, 1984, p. 1191)	7. In this kind of café, do guests stay for a long time?	Strongly disagree/ agree
		8. During the café visit, are you relaxed?	Strongly disagree/ agree
		9. Is the atmosphere today in the café distinct?	Strongly disagree/ agree

In addition to the nine questions assessing attitude, one question on the instrument assessed gender, one question assessed age, and one question assessed if the respondent had filled out the survey at any point of time before.

### Sample

The sample consisted of guests at a local café in an average sized town in Sweden. The café offered sandwiches, cookies, waffles, cold and hot beverages such as soft drinks and coffee and so forth. The size of the establishment was in total 106 m<sup>2</sup> divided across three rooms and 15 tables. The experiment took place over 15 working days resulting in 209 completed surveys; 47 % (98) men and 53% (111) women. In an attempt to secure thoughtful completion of the surveys (to avoid children and younger teenagers) a minimum age of 18 years old was set. A majority of the participants were in the age group of 18-30, followed by 30-50 and 51+.

### Procedure

To make sure that the respondents were given the opportunity to perceive the scents (when present) the survey was handed out in person after the respondents had finished eating and drinking their coffee, and were simply spending some time in the café. Also, in this way the authors disturbed respondents less, compared to if the guests had been handed the survey when arriving at the café. Upon receiving the instruments the respondents were informed that it would be very much appreciated if they could contribute to a study by completing the survey. Indeed, administering a questionnaire in this manner has an advantage over, for example, postal surveys due to direct contact with possible respondents that hence can increase the willingness to participate in the survey (a disadvantage is the time and work it takes to personally hand out and collect the surveys).

Moreover, to increase the willingness among the respondents to answer a survey using some form of incentive can be used (cf. Gray, 2009), and accordingly, upon completing our questionnaire the respondents were given a chance to win a cinema ticket if they also provided their e-mail address. The guests were given some time to complete the survey before it was either handed in or collected. During the first five work-days, no scent was deployed (control setting). During the second set of five work days vanilla scented candles were deployed and lit. Candles were placed on each table. During the final five work-days, candles with the scent of fresh linen were deployed and lit. This pattern made it possible for scents from the previous week to evaporate during the weekend (when no data was collected).

#### 4. Results

##### Descriptive statistics

The assumption of normal distribution was assessed through normal probability plots, skewness and kurtosis. There was no proof of aberrant outliers. While the z value for kurtosis (0,827) was well within the acceptable range for normal distribution +/- 2.58 (e.g. Hair, Black, Babin, Anderson, & Tatham, 2006), the z value for Skewness (-4,321) was outside this range (Table 3). As t-test are considered to be relative robust with regard to the assumption of normality (e.g. Chen, Diehr, Emerson, & Lumley, 2002; Moore & McCabe, 2006), and as the dependent variable were considered interval, t-test for independent samples was deployed to test the hypotheses.

**Table 3: Descriptive Statistics**

	N	Min.	Max.	Mean	Std.	Skewness			Kurtosis		
						Statistic	Std. error	z	Statistic	Std. error	z
Attitude	209	2,78	7,00	5,7459	0,83854	-0,726	0,168	-4,321	0,277	0,335	0,827

##### Hypotheses

##### Hypothesis 1 – Congruent condition compared to control

*H1*: Added congruent scent has a positive effect on consumers' attitude towards a café.

The results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the congruent scent (vanilla) condition ( $M = 5,7944$ ,  $SD = 0,92503$ ) compared to the control condition ( $M = 5,6889$ ,  $SD = 0,92503$ );  $t(140) = -0,732$ ,  $p = 0,466$ (2-tailed).

##### Hypothesis 2 – Incongruent condition compared to control

*H2*: Added incongruent scent has a negative effect on consumers' attitude towards a café.

The results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the incongruent scent (Fresh Linen) condition ( $M = 5,7612$ ,  $SD = 0,82476$ ) compared to the control condition ( $M = 5,6889$ ,  $SD = 0,77520$ );  $t(140) = -0,536$ ,  $p = 0,593$ (2-tailed).

##### Hypothesis 3 – Women; Congruent condition compared to control

*H3*: Added congruent scent has a positive effect on women's attitudes towards a café.

The results reject  $H_0$  because there was a statistically significant difference in the attitude scores under the congruent scent (vanilla) condition ( $M = 6,1333$ ,  $SD = 0,71340$ ) compared to the control condition ( $M = 5,7639$ ,  $SD = 0,84552$ );  $t(73) = -2,052$ ,  $p = 0,044$ (2-tailed).

##### Hypothesis 4 – Women; Incongruent condition compared to control

*H4*: Added incongruent scent has a negative effect on women's attitudes towards a café.

The results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the incongruent scent (Fresh Linen) condition ( $M = 5,8889$ ,  $SD = 0,78027$ ) compared to the control condition ( $M = 5,7639$ ,  $SD = 0,84552$ );  $t(74) = -0,670$ ,  $p = 0,505$ (2-tailed).

##### Hypothesis 5 – Men; Congruent condition compared to control

*H5*: Added congruent scent has a positive effect on men's attitudes towards a café.



The results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the congruent scent (vanilla) condition ( $M = 5,4236$ ,  $SD = 0,99598$ ) compared to the control condition ( $M = 5,6032$ ,  $SD = 0,68826$ );  $t(65) = 0,851$ ,  $p = 0,399$ (2-tailed).

### **Hypothesis 6 – Men; Incongruent condition compared to control**

$H_6$ : Added incongruent scent has a negative effect on men's attitudes towards a café.

The results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the incongruent scent (Fresh Linen) condition ( $M = 5,6129$ ,  $SD = 0,86251$ ) compared to the control condition ( $M = 5,6032$ ,  $SD = 0,68825$ );  $t(64) = -0,050$ ,  $p = 0,960$ (2-tailed).

### **Additional Results**

When the congruent condition is compared to the incongruent condition, the results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the congruent scent (vanilla) condition ( $M = 5,7944$ ,  $SD = 0,92503$ ) incongruent scent (Fresh Linen) condition ( $M = 5,7612$ ,  $SD = 0,82476$ );  $t(132) = -0,219$ ,  $p = 0,827$ (2-tailed).

When looking at women only and the congruent condition is compared to the incongruent condition, the results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the congruent scent (vanilla) condition ( $M = 6,1333$ ,  $SD = 0,71340$ ) incongruent scent (Fresh Linen) condition ( $M = 5,8889$ ,  $SD = 0,78027$ );  $t(69) = 1,378$ ,  $p = 0,173$ (2-tailed).

When looking at men only the congruent condition is compared to the incongruent condition, the results reject  $H_1$  because there was no statistically significant difference in the attitude scores under the congruent scent (vanilla) condition ( $M = 5,4236$ ,  $SD = 0,99598$ ) incongruent scent (Fresh Linen) condition ( $M = 5,6129$ ,  $SD = 0,86251$ );  $t(61) = -0,807$ ,  $p = 0,423$  (2-tailed).

## **5. Conclusions**

The results show that in a café setting, adding congruent or incongruent scent does not have a statistically significant impact on the general consumer's attitude towards the café. With regard to men in specific, again the results show that in a café setting, adding congruent or incongruent scent does not have a statistically significant impact on the general consumer's attitude towards the café. However, with regard to women in particular, the results show that in a café setting, adding congruent scent has a statistically significant positive effect on women's attitudes towards the café, while in contrast; adding incongruent scent does not have a statistically significant impact on women's attitudes towards the café.

## **6. Discussion**

The results question the conception that adding a congruent scent in a café setting result in more positive attitudes among general consumers compared to no-scent or to an incongruent scent (cf. e.g. Bone & Ellen, 1999; Bone & Jantrania, 1992). However, the results support the conception that adding a congruent scent result in more positive consumer attitudes compared to no-scent in a café setting – if the consumers in question are women. This result is in line with the notion that women are more sensitive or responsive to and informed by scents (cf. Bone & Ellen, 1999; Dalton et al., 2002; Martin et al., 2001; Wysocki & Gilbert, 1989). The fact that an incongruent scent does not result in more negative consumer attitudes compared to no-scent in a café setting is interesting. It questions the idea that incongruent scents result in worse evaluations (cf. Bone & Ellen, 1999) or (to the extent that incongruence is unpleasant) that women exhibit less tolerance with regard to unpleasant scents than men (cf. Nordin et al., 2004).

The mixed results reinforce the notion (i.e. Bone & Ellen, 1999) that gender should play a part in a theory is further advanced. From a practical standpoint managers may want to consider deploying congruent scent specifically with women in mind. On the one hand the results point towards such an action; while incongruence is not ideal and should be avoided, the negative effects on consumers' (women and men) attitudes may be limited as long as the incongruence is within reasonable limits. On the other hand, congruent scent can indeed have a positive effect on consumer attitudes among women. In this sense the results suggest that adding scent may be a reasonable risk to take for a café manager who wants to improve (female) customer's attitudes towards the café.

Having said the above, to only focus on the sense smell is not enough to achieve positive attitudes among café guests; rather the whole service concept is important. In fact, it may be that if a café is considered not very pleasant, an added scent may increase the attitude positively, but if the café is already considered very pleasant, an added scent may not have a great impact. This may be an alternative explanation for the rejected hypotheses. Therefore, a path for fruitful further research would be to include cafés associated with different consumer attitudes to begin with (different levels of venue pleasantness) and again assess (and compare) the effects of added scent on consumer attitudes toward these cafes. Another approach could, at least in theory, be to simply increase the intensity of the added scent with the hope of increasing its impact relative to other stimuli. However, as increased scent-intensity is generally associated with the scent being perceived as less pleasant (Henion, 1971; Richardson & Zucco, 1989), the perceived unpleasantness may taint the results.

Scent congruity has arguably two sides: on the one hand a scent could be (in) congruent to a service setting and on the other hand it could be (in) congruent to customers' individual scent preferences. Thus, one reason for the results with regard to gender could be that the congruent scent (vanilla) may be considered feminine (E. R. Spangenberg et al., 2006) which would explain the effect on women (assuming that women perceive vanilla to be congruent with them as females). Similarly, a possible explanation for why the incongruent scents had no effect on attitudes could be that the incongruent scent was liked (congruent with the individual) even though it was not congruent with the café. Put differently, individual scent preferences might have been stronger than scent preferences with regard to a café. One obvious way to control for such preferences in future research is to assess them and take them into account. Another approach could be to deploy a scent that is (in) congruent to a greater degree. But to deploy a scent that is (bordering on) unpleasant in an experiment is in practice very problematic since it could be devastating for a café's business and reputation. Guests could possibly leave and never come back. However, there might be incongruent scents that are extremely incongruent but still not unpleasant.

In short further research is needed in this area. Taking the above into account, such research could imply experiments in several types of cafés, during longer periods of time, as well as several data collections over time. For example, cafes' could be categorized in terms of their pleasantness (consumers' attitudes towards them). Consumers individual scent preferences could be taken into account, as well as several degrees of (in) congruent scents deployed in the café's. In addition, further dependent variables such as financial measures (e.g. sales), or for how long guests believe/perceive they have stayed in the café compared to how long they actually stayed, would be interesting paths for further research.

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