

## What to diffuse in a gender-specific store? The effect of male and female perfumes on customer value and behaviour

LIEVE DOUCÉ\*, WIM JANSSENS, SARA LEROI-WERELDS and SANDRA STREUKENS

*Campus Diepenbeek, Faculty of Business Economics, Department of Marketing and Strategy, Hasselt University, Agoralaan Building D, BE-3590 Diepenbeek, Belgium*

### ABSTRACT

Sensory marketing can be an efficient way to involve consumers in the store environment. Diffusing a pleasant ambient scent that matches with the store setting is often used to create pleasant shopping experiences. The aim of this study is to extend scent marketing research: (i) by examining the effect of pleasant ambient scent on the different dimensions of customer value; and (ii) by exploring whether product-scent incongruity can have a positive effect on consumer evaluations. A field experiment with 182 participants showed that a pleasant gender-incongruent ambient perfume positively influences different dimensions of customer value as compared to the absence of a perfume. Moreover, a gender-incongruent perfume also leads to a more positive evaluation of the play, product excellence, and social dimension of customer value as compared to a gender-congruent perfume. A pleasant gender-congruent ambient perfume, on the other hand, only has a positive effect on the aesthetic dimension of customer value as compared to the absence of a perfume. The observed ambient scent effects do not differ between men and women. These results are in contrast with existing literature. However, an explanation for this undocumented effect can be found in the mate attraction theory. Copyright © 2015 John Wiley & Sons, Ltd.

### INTRODUCTION

Pleasant ambient scents can positively influence consumers' affective, cognitive, and behavioural reactions (e.g. Bitner, 1992; Gulas and Bloch, 1995; Bone and Ellen, 1999). However, an important moderator of these scent effects is the congruity between the scent and the store's offerings. Previous research has found that pleasant ambient scents improve consumer evaluations and approach behaviour more when the scent is congruent with the setting than when the scent is incongruent with the setting (e.g. Bone and Jantrania, 1992; Bosmans, 2006; Spangenberg *et al.*, 2006; Doucé *et al.*, 2013). However, based on the mate attraction theory, this study suggests that incongruity does not always have a negative effect on consumer evaluations.

Furthermore, the effect of scents on customer value was studied. To date, little attention has been paid to this effect. This is a critical gap in the literature because customer value has been recognized as one of the most significant factors in the success of organizations (e.g. Gallarza *et al.*, 2011; Woodruff, 1997). Although previous studies already examined the effect of scents on particular facets of customer value, such as perceived product quality (e.g. Spangenberg *et al.*, 1996), this is—to the best of the authors' knowledge—the first study that examines the effect of scents on all customer value types at the same time.

Thus, the aim of this study is to extend scent marketing research: (i) by examining the effect of pleasant ambient scent on the different dimensions of customer value; and (ii) by arguing that incongruity does not always have a negative effect on consumer evaluations.

### PLEASANT AMBIENT SCENT EFFECTS

The store atmosphere, which can be influenced by scents, music, and other sensory elements, is an important aspect of the shopping experience. There is ample evidence that atmospheric cues within the store environment have a positive effect on consumer reactions and evaluations (e.g. Sherman *et al.*, 1997; Turley and Milliman, 2000; Briand and Prass, 2010; Brengman *et al.*, 2012). Numerous scholars have shown positive pleasant ambient scent effects on consumers' attention, experienced pleasure, evaluations of the store (environment), evaluations of the products, time spent in the store, intentions to revisit the store, and other approach behaviour (e.g. Spangenberg *et al.*, 1996; Morrin and Ratneshwar, 2003; Doucé and Janssens, 2013). The theoretical paradigm used for studying ambient scent effects on shopping behaviour is the stimulus–organism–response paradigm (Mehrabian and Russell, 1974; Gulas and Bloch, 1995). The ambient scent functions as the stimulus that triggers affective and cognitive consumer reactions. Subsequently, these reactions lead to approach or avoidance behaviour (i.e. a positive or negative reaction, respectively).

The current study examines the effect of pleasant ambient scents on customer value. Customer value has been widely recognized as an essential ingredient for organizational success (Slater, 1997; Woodruff, 1997; Sweeney and Soutar, 2001). Furthermore, it has been proven to be a key antecedent of customer satisfaction, (re)purchase intentions, word of mouth (Bolton and Drew, 1991; Zeithaml *et al.*, 1996; Cronin *et al.*, 2000; Lai *et al.*, 2009), and ultimately the long-term profitability of the organization (Anderson *et al.*, 1994; Kamakura *et al.*, 2002). Overall, customer value plays a key role at the heart of all marketing activities and, as a result, deserves the attention of every marketing researcher (Holbrook, 1999).

In this study, the definition and conceptualization of customer value developed by Holbrook (1999) were followed.

\*Correspondence to: Lieve Doucé, Hasselt University, Campus Diepenbeek, Faculty of Business Economics, Department of Marketing and Strategy (B261), Agoralaan Building D, BE-3590 Diepenbeek, Belgium.  
E-mail: lieve.douce@uhasselt.be

He defines customer value as, “an interactive relativistic preference experience” (Holbrook, 1999: 5). This implies that customer value (i) involves an interaction between a subject (a customer) and an object (a product, a service or a store); (ii) is comparative, personal, and situation-specific; and (iii) embodies a preference judgement (Holbrook, 1999). In line with this conceptualization, Holbrook (1999) suggests a framework based on various value types. The Holbrook approach was chosen for the following reasons. First, Holbrook’s approach is considered to be “the most comprehensive approach to the value construct because it captures more potential sources of value than do other conceptualizations” (Sánchez-Fernández *et al.*, 2009: 97). Second, Holbrook’s typology conceptualizes value from an experiential point of view, which is interesting for analysing shopping incidents as those are highly experiential in nature (Babin *et al.*, 1994; Jones *et al.*, 2006; Rintamäki *et al.*, 2007). Third, Leroi-Werelds *et al.* (2014) compared different approaches for measuring customer value and based on their guidelines, Holbrook’s approach is the best choice for this study.

#### SCENT (IN)CONGRUITY

When diffusing a pleasant ambient scent, the congruity of the scent with the store and/or its products is an important factor to take into account (Gulas and Bloch, 1995; Mitchell *et al.*, 1995; Doucé *et al.*, 2013). Congruent scents are scents that are expected in a particular setting because the scent and the setting are thematically matched. The scent can function as a primer, which means that once the consumer perceives the scent, it may start an automatic knowledge activation process. The scent then activates stored knowledge, making certain concepts temporarily more accessible. So, congruent scents increase the accessibility of attitudes and memories associated with the store, its products, and its brands, resulting in more elaboration and more inferences about the products (Mitchell *et al.*, 1995; Spangenberg *et al.*, 2006). For example, Spangenberg *et al.* (2006) showed that a masculine ambient scent diffused in a men’s clothing department improves consumers’ evaluations of and approach behaviour toward men’s clothing as compared to the presence of a feminine ambient scent and vice-versa. On the other hand, incongruent scents can lead to cognitive interference, because the information activated by the incongruent scent does not match with the product and the decision task.

The current study argues that in certain cases, incongruent scents can have positive effects on consumer responses. Spence *et al.* (2014) already indicated that incongruent environments can lead to positive consumer responses in specific and unique places. In line with Spangenberg *et al.* (2006), the effects of a gender-(in)congruent scent diffused in a men’s and women’s clothing store are studied. To make sure that the scents are perceived as much as possible as either masculine or feminine, we opted to use specific masculine and feminine scent blends. This is in contrast with the study of Spangenberg *et al.* (2006) in which singular scents were used (i.e. rose maroc and vanilla, which are perceived as

masculine or feminine, respectively). Based on congruity effects, one could expect that a masculine perfume in a men’s clothing store and a feminine perfume in a women’s clothing store lead to more positive evaluations than when no scent is diffused in the particular clothing store.

Contrary to Spangenberg *et al.* (2006), this study argues that the presence of a gender-incongruent perfume also leads to more positive evaluations than when no scent is diffused. This study works with masculine and feminine perfumes, and because perfumes are important in sexual communication, they can be seen as mating cues (Milinski and Wedekind, 2001; Capparuccini *et al.*, 2010). For example, in a focus group study conducted by Janssen *et al.* (2008), men revealed that a woman’s scent influences their sexual arousal. Additionally, a recent study based on self-questionnaires indicated that women use makeup, including perfume, either for camouflage or for seduction (Korichi *et al.*, 2008). Furthermore, previous research showed that exposure to mating cues (e.g. pictures of sexy women) triggers a mating goal in men (Maner *et al.*, 2007). Earlier research also demonstrated that human scents can work as a signal in mate selection. For example, Miller and Maner (2010) showed that men displayed higher levels of testosterone when smelling a t-shirt worn by a woman near ovulation compared to smelling one worn by a woman far from ovulation. In addition, Rantala *et al.* (2006) found that women near ovulation evaluated male scents as more attractive than women in other menstrual cycle phases.

Human-mating research states that there are sex differences in mate preferences (Feingold, 1992). Two robust findings are that men express a greater preference for mates who are physically attractive and young because these cues are related to fertility and health, whereas women express a greater preference for mates who are wealthy and ambitious, as these cues are related to financial prosperity and social status (Saad, 2007). These differences are explained by the parental investment theory, which states that men prefer women who are fertile to increase the chance of gene transmission and women prefer men who can secure their offspring survival (Trivers, 1972). However, mate preferences are also dependent on the temporal context of the relationship (Buss and Schmitt, 1993). For example, women find physical attractiveness more important for short-term relationships (Urbaniak and Kilmann, 2003).

Human-mating involves two sub-goals: mate selection and mate attraction (Janssens *et al.*, 2011). The mate selection goal means that men and women screen opposite (or same) sex individuals, and this allows them to detect suitable mates. The mate attraction goal involves demonstrating one’s own mating value to the opposite sex. For men, the attraction goal leads them to signal their physical attractiveness (short-term relationships) and/or their access to financial resources (long-term relationships). For example, Roney (2003) found that after visual exposure to potential mates (i.e. mating cue), men attached more importance to ambition and social status. Similarly for women, the mate attraction goal activation leads them to signal their physical attractiveness. When this goal becomes activated, people will evaluate the stimuli that help them reach their goal more positively (Ferguson, 2008),

and it is also more likely that they approach the goal-relevant stimuli (Ferguson and Bargh, 2004). So, the opposite-sex perfume (i.e. gender-incongruent scent) diffused in the store can function as a mating cue, activating the mate attraction goal. This goal leads consumers to evaluate the clothing store more positively because the (chosen) clothes, and therefore the store, help consumers signal their mating value. Taken the above into account, the following hypotheses are proposed:

*H1:* The presence of a pleasant gender-congruent ambient perfume will lead to a more positive evaluation of customer value as compared to the absence of a pleasant ambient perfume.

*H2:* The presence of a pleasant gender-incongruent ambient perfume will lead to a more positive evaluation of customer value as compared to the absence of a pleasant ambient perfume.

Because it is unclear whether the congruity or the incongruity effect prevails, the following research question is formulated:

*RQ1:* Is the effect of a pleasant gender-congruent ambient perfume on customer value different from the effect of a pleasant gender-incongruent ambient perfume?

## METHOD

### Scent selection

Most perfumes are categorized as either masculine or feminine (Lindqvist, 2012). To make sure that the perfumes used in the main study are indeed perceived as masculine or feminine, and to ensure that the chosen perfumes are equally pleasant and stimulating,<sup>1</sup> a pretest was conducted. Sixteen perfumes (eight feminine and eight masculine), which are frequently used in practice and marketed by Scents, an olfactory marketing firm in Belgium, were selected. Participants were 50 respondents (25 women and 25 men) between 18 and 30 years old. They were asked to sniff the 16 perfumes and to evaluate the masculinity/femininity, pleasantness, and stimulating nature of the perfumes. Masculinity/femininity of the perfumes was measured by a 3-item, 7-point semantic differential scale. Items were masculine/feminine, unfeminine/feminine, and unmasculine/masculine (Friedman and Dipple, 1978). The pleasantness and stimulating nature of the perfumes were measured by a 7-point semantic differential (i.e. unpleasant/pleasant, unaroused/aroused). The perfumes were presented in random order (on a cotton-tipped stick in a dark glass bottle), and

respondents were instructed to sniff the perfumes as many times as they liked while completing the survey. Between successive perfumes, participants smelled ground coffee to restore their scent palette (Krishna *et al.*, 2010). This technique is frequently used in the fragrance industry to neutralize the odours in the nose, preventing contamination from one scent to the next.

The aim of the pretest was to find a feminine and masculine perfume that was equally pleasant and stimulating. Of the 16 perfumes, *Hendrik* was chosen as the masculine scent and *Dreams* as the feminine scent. The *Hendrik* perfume is a fruity scent with cinnamon and sandalwood facets (based on a Hugo Boss perfume). The *Dreams* perfume is a green, fruity scent which contains aspects of Muscat and black currant. Further elements are white musk, vanilla, jasmine, lilies, and violets. Based on the overall sample, *Hendrik* ( $M=5.20$ ,  $SD=1.78$ ,  $t(49)=4.76$ ,  $p<.001$ ) and *Dreams* ( $M=5.14$ ,  $SD=1.59$ ,  $t(49)=5.07$ ,  $p<.001$ ) were found to be pleasant scents, significantly different from the scale midpoint of 4. Moreover, the *Hendrik* perfume and the *Dreams* perfume differed on masculinity/femininity ( $M_{Hendrik}=2.87$ ,  $M_{Dreams}=5.34$ ,  $t(49)=-7.00$ ,  $p<.001$ ), but did not differ on pleasantness ( $M_{Hendrik}=5.20$ ,  $M_{Dreams}=5.14$ ,  $t(49)=.20$ ,  $p=.84$ ) and stimulating nature ( $M_{Hendrik}=4.62$ ,  $M_{Dreams}=4.50$ ,  $t(49)=.41$ ,  $p=.69$ ). When the perfumes were analysed separately for male and female participants, similar results were found. Male participants found *Hendrik* ( $M=5.00$ ,  $SD=1.80$ ,  $t(24)=2.77$ ,  $p=.01$ ) and *Dreams* ( $M=4.84$ ,  $SD=1.65$ ,  $t(24)=2.55$ ,  $p=.02$ ) pleasant scents, significantly different from the scale midpoint of 4. For men, the *Hendrik* perfume and the *Dreams* perfume also differed on masculinity/femininity ( $M_{Hendrik}=3.52$ ,  $M_{Dreams}=4.99$ ,  $t(24)=-3.81$ ,  $p=.001$ ), but did not differ on pleasantness ( $M_{Hendrik}=5.00$ ,  $M_{Dreams}=4.84$ ,  $t(24)=.39$ ,  $p=.70$ ) and stimulating nature ( $M_{Hendrik}=4.64$ ,  $M_{Dreams}=4.00$ ,  $t(49)=1.93$ ,  $p=.07$ ). Likewise, female participants found the *Hendrik* perfume ( $M=5.40$ ,  $SD=1.78$ ,  $t(24)=3.93$ ,  $p=.001$ ) and the *Dreams* perfume ( $M=5.44$ ,  $SD=1.50$ ,  $t(24)=4.79$ ,  $p<.001$ ) more pleasant than the scale midpoint of 4. For women, the *Hendrik* perfume and the *Dreams* perfume also differed regarding masculinity/femininity ( $M_{Hendrik}=2.23$ ,  $M_{Dreams}=5.69$ ,  $t(24)=-6.61$ ,  $p<.001$ ) but did not differ on pleasantness ( $M_{Hendrik}=5.40$ ,  $M_{Dreams}=5.44$ ,  $t(24)=-.09$ ,  $p=.93$ ) and stimulating nature ( $M_{Hendrik}=4.60$ ,  $M_{Dreams}=5.00$ ,  $t(49)=-.85$ ,  $p=.40$ ).

### Design, participants, and procedure

A field experiment was conducted in two clothing stores located in the same building in a small European city. The target groups of the clothing stores are young adults. The male clothing store was located on the ground level, whereas the female clothing store was located on the first floor. The study applied a between-subjects design with three scent conditions: no perfume (i.e. control condition), a gender-congruent ambient perfume (i.e. feminine scent in female clothing store and masculine scent in male clothing store), and a gender-incongruent ambient perfume (i.e. feminine scent in male clothing store and masculine scent in female clothing store). The ambient perfumes were diffused throughout the entire store making use of an *Aerostreamer 1000* fragrance

<sup>1</sup>Note: For the remainder of the paper, it is important that the reader knows that in Dutch, arousal can have two meanings: a more neutral meaning of stimulation and a meaning more related to the concept of sexual arousal. In scent marketing research, arousal is usually translated to stimulation to avoid the sexual connotation. As a result, stimulation measured in the pretest cannot be seen as an indication of sexual arousal.

appliance. Based on the principle of warm evaporation (electrical), this appliance works by heating the liquid scent on a metal plate, and subsequently this fragrance is distributed by a fan. No special promotions were launched during the experiment.

Participants were 182 shoppers (91 men and 91 women). The interquartile range of the participants' age lies between 20 and 38 years, which matches with the target group of the stores. Male shoppers only evaluated the male clothing store and female shoppers only evaluated the female clothing store because they are the specific target group for the stores. When the shoppers left the store, they were asked to complete a survey containing evaluation variables and demographics. There were 61 participants (31 men and 30 women) in the control condition, 61 participants (30 men and 31 women) in the congruent scent condition, and 60 participants (30 men and 30 women) in the incongruent scent condition.

### Dependent variables

The main dependent variable in this study was customer value. However, we also included satisfaction and repurchase intention as key outcomes of customer value (see Figure 1 for overall model), which is in line with the customer value literature (e.g. Cronin *et al.*, 2000; Leroi-Werelds *et al.*, 2014). As previously mentioned, the typology suggested by Holbrook (1999) was followed to conceptualize and operationalize customer value. Based on previous studies using the Holbrook typology (Gallarza and Gil-Saura, 2006; Sánchez-Fernández *et al.*, 2009; Willems *et al.*, 2012; Leroi-Werelds *et al.*, 2014), seven value types were used to operationalize customer value: product excellence, service excellence, efficiency, aesthetics, social value, play, and altruistic value. When applying Holbrook's typology, it is important to note that the different value types may have either a reflective or a formative measurement model. This distinction has important consequences for the contents of the scale (Jarvis *et al.*,

2003). For the reflective value types, existing validated scales were used (e.g. altruistic value: Du *et al.*, 2007; excellence: Oliver, 1997; efficiency: Ruiz *et al.*, 2008; social value: Sweeney and Soutar, 2001; play: Petrick, 2002) and adapted to the setting at hand. Regarding the formative value types (i.e. service excellence, aesthetics, and efficiency), it is important that all aspects in the construct's domain are adequately covered (Diamantopoulos and Winklhofer, 2001). To generate items, the literature was reviewed to include as many facets of the construct's domain as possible (e.g. Willems *et al.*, 2012).

To assess customer satisfaction, Wirtz and Lee's (2003) 11-point scale was used. Repurchase intention was measured based on the work of Zeithaml *et al.* (1996). All individual items are listed in Table 2a and Table 2b and are evaluated on 7-point Likert scales unless otherwise indicated.

### Analytical approach

Given the use of both formative and reflective measurement scales, a Partial Least Squares approach to Structural Equation Modeling (PLS-SEM) was used (cf. Hair *et al.*, 2011; Hair *et al.*, 2014). To analyse the effects of the experimental manipulations (i.e. no perfume, gender-congruent perfume, gender-incongruent perfume) on the metric variables in the model, the procedure outlined by Streukens *et al.* (2010) was followed. Regarding the PLS-SEM analyses, the statistical significance of all estimates was assessed by calculating bootstrap percentile confidence intervals based on 5000 bootstrap samples (Preacher and Hayes, 2008).

Next, a MANOVA was conducted to assess whether or not the effect of pleasant ambient perfume differs as a function of gender (follow-up tests). Although it is technically possible to conduct these follow-up tests using PLS-SEM, the number of respondents per gender category is too limited to warrant a sufficient level of statistical power for this technique (see also Hair *et al.*, 2014).

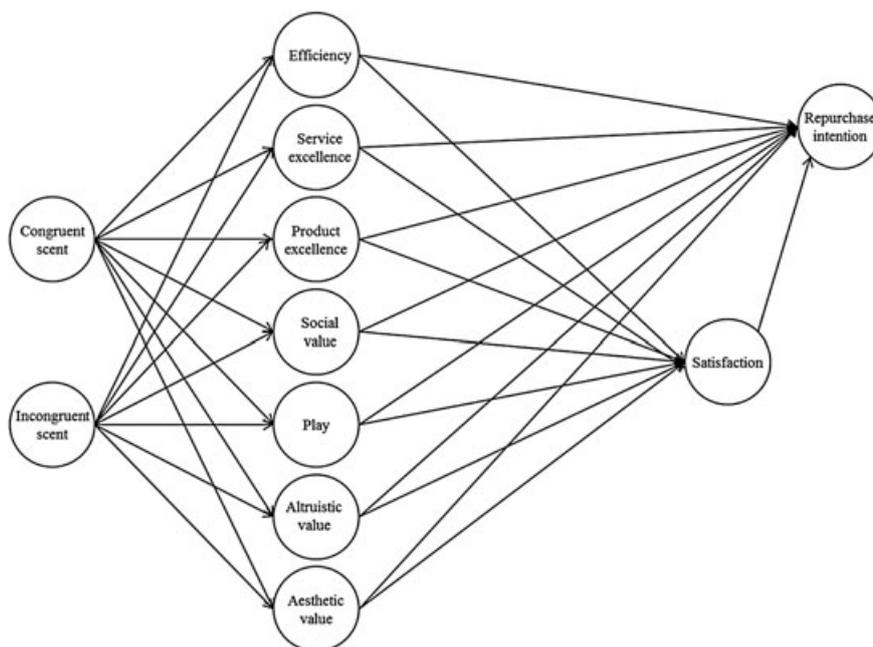


Figure 1. Structural model.

## RESULTS

**Descriptive and bivariate correlations**

Table 1 presents the mean, standard deviation, and bivariate correlation coefficients of the metric constructs employed within this study.

**Psychometric properties**

In line with MacKenzie *et al.* (2005), unidimensionality, internal consistency reliability, within-method convergent validity, and discriminant validity were assessed for the reflective constructs under study, whereas item significance and discriminant validity were assessed for the formative constructs. The empirical results related to the assessment of the psychometric properties are presented in Table 2a and Table 2b.

Starting with the reflective constructs, the results provide evidence for each construct's unidimensionality based on the procedure suggested by Sahmer *et al.* (2006). Based on Nunally and Bernstein (1994) guidelines, internal consistency reliability is evidenced as all the composite reliability estimates exceed the recommended cut-off level of 0.70. Within method-convergent, validity is supported as all average variance extracted values are above 0.50 (Fornell and Larcker, 1981). Finally, comparison of the average variance extracted value to the squared inter-construct correlation coefficients (cf. Fornell and Larcker, 1981) indicates the presence of discriminant validity.

Regarding the formative constructs, the main concern is the significance of the indicator weights. The results in Table 2b reveal that not all indicator weights are significantly different from zero. Although from a purely econometric perspective these items are candidates for deletion, they were kept in the measurement model as deleting them may alter the meaning of the construct (Diamantopoulos and Winklhofer, 2001). Furthermore, for the formative constructs, discriminant validity was evidenced as all the confidence intervals of the relevant latent variable correlations did not include an absolute value of 1 (Anderson and Gerbing, 1988).

**Structural model assessment**

Table 3 reports the results pertaining to the structural model. In general, the model reveals a statistically significant fit to the data for all endogenous constructs, except product excellence and service excellence, as evidenced by the percentile bootstrap confidence intervals constructed around the

endogenous constructs'  $R^2$  values (Ohtani, 2000). Turning to the individual structural model coefficients, the results indicate that compared to the absence of a perfume, a gender-congruent ambient perfume only has a significant impact on the value dimension aesthetics. In contrast, as compared to no perfume, a gender-incongruent ambient perfume has a significant impact on all value dimensions except product excellence and service excellence.

To provide an answer on the formulated research question (i.e. Is the effect of a pleasant gender-congruent ambient perfume on customer value larger than the effect of a pleasant gender-incongruent ambient perfume?), the bootstrapped path coefficients were compared. The results of this analysis indicate that the effect of a gender-incongruent ambient perfume is larger than the effect of a gender-congruent ambient perfume for play:  $\Delta\beta = .18$ , 95% CI [.02; .46]; and for social value:  $\Delta\beta = .20$ , 95% CI [.02; .36]. Furthermore, a similar pattern was found for product excellence, but the difference was only marginally significant:  $\Delta\beta = .16$ , 90% CI [.02; .30].

In terms of the outcome variables satisfaction and repurchase intention, the results show that not all value dimensions play a significant role. Whereas only the value dimensions play and product excellence have a direct impact on both satisfaction and repurchase intention, the value dimensions efficiency and service excellence solely influence satisfaction. Finally, the results also support the commonly evidenced relationship between satisfaction and repurchase intention.

**Follow-up analyses**

In these follow-up analyses, this study investigates whether the scent effect is the same for men and women. The parental investment theory (Trivers, 1972) states that women have a higher initial obligatory parental investment level than men, leading them to be more discriminating and selective in their mate choice. Therefore, it is possible that women may require more information about potential mates than subtle mating cues before a mating goal is activated. For example, Roney (2003) found that visual exposure to attractive people of the opposite sex only affected men and not women, and argued that women needed more than minimal visual information before courting men. Additionally, previous research confirms that mating goals are activated by mixed-sex interactions, especially for men (Baumeister *et al.*, 2001; Karremans *et al.*, 2009).

To gain insight into the possible gender-scent interaction effect on customer value, a 3 (pleasant ambient perfume:

Table 1. Descriptives and bivariate correlations

		Mean	SD	1	2	3	4	5	6	7	8	9
1	Aesthetic value	5.68	0.70	1.00								
2	Altruistic value	4.95	1.02	0.52	1.00							
3	Efficiency	5.53	0.75	0.70	0.59	1.00						
4	Play	5.15	1.01	0.69	0.54	0.70	1.00					
5	Product excellence	4.67	1.21	0.53	0.60	0.61	0.59	1.00				
6	Service excellence	5.33	0.88	0.61	0.60	0.63	0.60	0.49	1.00			
7	Social value	4.38	1.37	0.47	0.47	0.53	0.58	0.41	0.40	1.00		
8	Satisfaction	7.54	1.37	0.59	0.55	0.69	0.71	0.66	0.63	0.41	1.00	
9	Repurchase intent	5.44	1.15	0.57	0.50	0.68	0.71	0.60	0.58	0.44	0.82	1.00

Table 2a. Psychometric properties reflective constructs

Construct and items	Loading	Bootstrap percentile CI
Altruistic value ( $\lambda_1 = 1.77$ ; $\lambda_2 = 0.23$ ; $\alpha = 0.94$ ; ave = 0.88)		
1. This store is a socially responsible company	0.95	[0.93; 0.96] <sup>a</sup>
2. This store makes a real difference through its socially responsible actions	0.93	[0.90; 0.95] <sup>a</sup>
Play ( $\lambda_1 = 4.12$ ; $\lambda_2 = 0.49$ ; $\alpha = 0.96$ ; ave = 0.82)		
1. Shopping at this store makes me feel good	0.89	[0.85; 0.92] <sup>a</sup>
2. Shopping at this store gives me pleasure	0.90	[0.87; 0.93] <sup>a</sup>
3. Shopping at this store gives me a sense of joy	0.90	[0.86; 0.93] <sup>a</sup>
4. Shopping at this store makes me feel delighted	0.94	[0.92; 0.96] <sup>a</sup>
5. Shopping at this store gives me happiness	0.90	[0.87; 0.93] <sup>a</sup>
Product excellence ( $\lambda_1 = 4.15$ ; $\lambda_2 = 0.29$ ; $\alpha = 0.96$ ; ave = 0.83)		
1. The offerings of this store are of excellent quality	0.89	[0.84; 0.92] <sup>a</sup>
2. The offerings of this store is superior in comparison to that of other stores	0.92	[0.89; 0.94] <sup>a</sup>
3. This store has high standards for its offerings	0.90	[0.85; 0.93] <sup>a</sup>
4. This store is one of the best with respect to quality clothing	0.93	[0.90; 0.94] <sup>a</sup>
5. The offerings of this store are high quality	0.92	[0.89; 0.94] <sup>a</sup>
Social value ( $\lambda_1 = 3.62$ ; $\lambda_2 = 0.2$ ; $\alpha = 0.97$ ; ave = 0.90)		
1. Shopping at this store helps me to feel acceptable	0.95	[0.93; 0.96] <sup>a</sup>
2. Shopping at this store improves the way I am perceived by others	0.96	[0.95; 0.97] <sup>a</sup>
3. Shopping at this store makes a good impression on other people	0.96	[0.94; 0.97] <sup>a</sup>
4. Shopping at this store gives me social approval	0.93	[0.90; 0.96] <sup>a</sup>
Repurchase intent ( $\lambda_1 = 3.97$ ; $\lambda_2 = 0.51$ ; $\alpha = 0.95$ ; ave = 0.79)		
1. I intend to do business with this store again in the future	0.95	[0.91; 0.95] <sup>a</sup>
2. It is very likely that I return to this store in the future	0.94	[0.92; 0.96] <sup>a</sup>
3. This store is my first choice when shopping for clothes	0.76	[0.69; 0.82] <sup>a</sup>
4. I have no doubt I am going to visit this store again.	0.87	[0.81; 0.92] <sup>a</sup>
5. When I need new clothes, I will definitely return to this store	0.93	[0.90; 0.95] <sup>a</sup>

Notes: <sup>a</sup>Loading significant at the 5% level;  $\lambda_1$  and  $\lambda_2$  denote respectively the first and second eigenvalue of the construct's inter-item correlation matrix;  $\alpha$  represents the internal consistency reliability; ave refers to the average variance extracted.

Table 2b. Psychometric properties formative constructs

Construct and items	Weight	Bootstrap percentile CI
Aesthetics		
1. The store's layout is appealing	0.40	[0.15; 0.63] <sup>a</sup>
2. The appearance of the staff is appropriate	0.24	[-0.08; 0.55]
3. The store is tidy	-0.17	[-0.57; 0.25]
4. The dressing rooms are clean	0.31	[-0.10; 0.70]
5. The store lighting is attractive	0.18	[-0.17; 0.51]
6. The shopping window looks attractive	-0.20	[-0.54; 0.15]
7. The offerings are presented in an appealing way	0.42	[0.05; 0.84] <sup>a</sup>
Efficiency		
1. This store is accessible	0.11	[-0.05; 0.28]
2. The store lay-out at this store makes it easy for customers to find what they need	0.13	[-0.05; 0.32]
3. This store's offerings are reasonably priced	0.02	[-0.21; 0.25]
4. This store offers good value for the price I pay	0.46	[0.21; 0.70] <sup>a</sup>
5. This store often has interesting bargains	0.28	[0.07; 0.51] <sup>a</sup>
6. This store's dressing rooms are comfortable	0.00	[-0.21; 0.19]
7. This store has convenient operating hours	0.30	[0.07; 0.53] <sup>a</sup>
8. Usually, waiting time at the cash registers is not too long	0.03	[-0.18; 0.24]
Service excellence		
1. The store's personnel is never too busy to respond to customer requests	-0.02	[-0.26; 0.23]
2. The store's personnel is approachable	-0.08	[-0.46; 0.29]
3. The store's personnel does its best to resolve any customer problem directly	0.46	[0.08; 0.81] <sup>a</sup>
4. The store's personnel is honest	0.11	[-0.22; 0.42]
5. The store's personnel offers prompt service to its customers	-0.01	[-0.36; 0.35]
6. The store's personnel listens to the customer	0.13	[-0.20; 0.46]
7. The store's personnel gives customers individual attention	0.04	[-0.25; 0.33]
8. The store's personnel is not pushy	0.16	[-0.12; 0.46]
9. The store's personnel is always courteous to customers	0.39	[0.07; 0.68] <sup>a</sup>
10. The store's personnel has the knowledge to answer customers' questions	0.13	[-0.12; 0.37]
11. The store's personnel does its best to solve customer complaints immediately	-0.18	[-0.45; 0.10]

Notes: <sup>a</sup>Weight significant at the 5% level.

Table 3. Path coefficients

Dependent variables	Independent variables	Coeff.	Percentile bootstrap CI	Conclusion coefficients
Aesthetics $R^2 = 0.06$ ; CI = [0.02; 0.10] <sup>a</sup>	Congruent	0.20	[0.01; 0.39]	Significant at 5%
	Incongruent	0.28	[0.09; 0.45]	Significant at 5%
Altruistic value $R^2 = 0.02$ ; CI = [0.01; 0.03] <sup>b</sup>	Congruent	0.08	[-0.09; 0.24]	Not significant
	Incongruent	0.15	[0.01; 0.28]	Significant at 10%
Efficiency $R^2 = 0.03$ ; CI = [0.01; 0.06] <sup>a</sup>	Congruent	0.07	[-0.12; 0.25]	Not significant
	Incongruent	0.21	[0.02; 0.39]	Significant at 5%
Play $R^2 = 0.05$ ; CI = [0.03; 0.08] <sup>a</sup>	Congruent	0.08	[-0.09; 0.25]	Not significant
	Incongruent	0.26	[0.11; 0.41]	Significant at 5%
Product excellence $R^2 = 0.02$ ; CI = [0.00; 0.04]	Congruent	-0.03	[-0.20; 0.14]	Not significant
	Incongruent	0.13	[-0.04; 0.29]	Not significant
Service excellence $R^2 = 0.02$ ; CI = [0.00; 0.03]	Congruent	0.12	[-0.07; 0.31]	Not significant
	Incongruent	0.14	[-0.05; 0.32]	Not significant
Social value $R^2 = 0.04$ ; CI = [0.01; 0.07] <sup>a</sup>	Congruent	0.02	[-0.15; 0.19]	Not significant
	Incongruent	0.22	[0.06; 0.38]	Significant at 5%
Satisfaction $R^2 = 0.63$ ; CI = [0.58; 0.67] <sup>a</sup>	Aesthetics	0.00	[-0.16; 0.17]	Not significant
	Altruistic	0.03	[-0.11; 0.17]	Not significant
	Efficiency	0.24	[0.09; 0.40]	Significant at 5%
	Play	0.32	[0.14; 0.48]	Significant at 5%
	Product excellence	0.16	[0.02; 0.29]	Significant at 5%
	Service excellence	0.23	[0.08; 0.39]	Significant at 5%
	Social	-0.07	[-0.17; 0.03]	Not significant
	Aesthetics	-0.01	[-0.14; 0.13]	Not significant
	Altruistic	-0.11	[-0.21; -0.01]	Not significant
Repurchase intent $R^2 = 0.74$ ; CI = [0.71; 0.77] <sup>a</sup>	Efficiency	0.10	[-0.05; 0.26]	Not significant
	Play	0.16	[0.02; 0.28]	Significant at 10%
	Product excellence	0.22	[0.11; 0.35]	Significant at 5%
	Service excellence	0.06	[-0.07; 0.20]	Not significant
	Social	0.03	[-0.08; 0.13]	Not significant
	Satisfaction	0.52	[0.38; 0.65]	Significant at 5%

## Notes:

<sup>a</sup> $R^2$  significant at the 5% level.<sup>b</sup> $R^2$  significant at the 10% level.

no vs. gender-congruent vs. gender-incongruent)  $\times$  2 (shopper gender: female vs. male) MANOVA with the seven dimensions of customer value as dependent variables was conducted. The interaction effect between ambient perfume and gender is not significant in the multivariate test (Wilks'  $A = .89$ ,  $p = .11$ ) as well as in the univariate analyses: aesthetics,  $F(2, 176) = .78$ ,  $p = .46$ ; altruistic,  $F(2, 176) = .14$ ,  $p = .87$ ; efficiency,  $F(2, 176) = .29$ ,  $p = .75$ ; play,  $F(2, 176) = .28$ ,  $p = .76$ ; product excellence,  $F(2, 176) = 1.37$ ,  $p = .26$ ; service excellence,  $F(2, 176) = .53$ ,  $p = .59$ ; social,  $F(2, 176) = .71$ ,  $p = .50$ . Hence, gender does not have a moderating effect on the pleasant ambient scent effects on customer value. Note that the multivariate main effect of gender is significant (Wilks'  $A = .91$ ,  $p = .03$ ,  $\eta_p^2 = .09$ ). Apparently, men evaluate the altruistic ( $F(1, 176) = 5.39$ ,  $p = .02$ ,  $\eta_p^2 = .03$ ), product excellence ( $F(1, 176) = 5.76$ ,  $p = .02$ ,  $\eta_p^2 = .03$ ), service excellence ( $F(1, 176) = 5.65$ ,  $p = .02$ ,  $\eta_p^2 = .03$ ), and social ( $F(1, 176) = 3.79$ ,  $p = .05$ ,  $\eta_p^2 = .02$ ) dimension of customer value more positively than women.

## DISCUSSION

The aim of this study was to examine whether a pleasant incongruent ambient scent in certain well-defined cases can have a positive effect on customer value. It was expected that the presence of a pleasant ambient feminine or masculine

perfume might give the male or female customer, respectively, an (implicit) impression that he/she is surrounded by individuals of the opposite sex. Consequently, this perfume may trigger the mate attraction goal, leading respondents to want to signal their physical attractiveness and leading them to evaluate stimuli that help them reach their goal more positively. The findings of this research confirm that a pleasant gender-incongruent ambient perfume positively influences different dimensions of customer value as compared to the absence of a perfume. Contrary to previous research examining scent congruity (e.g. Doucé *et al.*, 2013; Spangenberg *et al.*, 2006), the findings of this study show that a gender-incongruent perfume also leads to a more positive evaluation of the customer value dimensions play, product excellence, and social as compared to a gender-congruent perfume. The finding that a gender-incongruent perfume leads to better results than a gender-congruent perfume regarding these three dimensions corresponds with the theory that the perfume of the opposite sex is seen as a mating cue. Play represents the pleasure the customers experience when shopping in the store; product excellence is the customers' evaluation of the quality of the clothes; and social value measures how much shopping in this store improves the customers' image. These three dimensions of customer value are particularly important for mate attraction. The perfume of the opposite sex leads customers to experience pleasure and excitement, to want to improve their image (impression management),

and to evaluate the products that help them reach their desired image more positively. Furthermore, as compared to the absence of a perfume, a pleasant gender-congruent ambient perfume only has a positive effect on one dimension of customer value—*aesthetics*—which represents the customers' evaluation of the store environment. For the other dimensions of customer value, no difference between no perfume and a gender-congruent perfume is found. Apparently, the positive effect of a gender-congruent perfume on *aesthetics* does not hold for the other customer value dimensions. Finally, the findings show that all of the observed ambient scent effects are independent of the gender of the respondent. Hence, men and women are both influenced by subtle mating cues.

### Limitations, future research, and implications

This study focuses on a specific case of scent incongruity. Specifically, this research works with masculine and feminine perfumes. Because these perfumes can function as mating cues, a scent that is incongruent with the store's offerings has a positive effect on the target group's reactions. Future research should also focus on identifying other settings in which scent incongruity can have a positive effect on consumer evaluations.

Future research could also investigate the combined effect of scents and other atmospheric stimuli on shopping behaviour. Shopping is a holistic experience in which a consumer is simultaneously exposed to several environmental elements. Some studies have already explored the interaction effects of ambient scents with other atmospheric cues (e.g. Mattila and Wirtz, 2001; Morrison *et al.*, 2011; Spangenberg *et al.*, 2005). However, most research has been concentrated on the combination music and scent. Hence, additional research exploring other combinations of atmospheric stimuli is still needed—specifically with respect to their possible implicit mating cue properties.

The findings of this study also have theoretical and practical implications. First, the effect of pleasant ambient scent on different customer value facets is an important finding. Customer value has been recognized as one of the most essential ingredients for organizational success (e.g. Gallarza *et al.*, 2011). However, no previous research looked at ambient scent effects on all customer value facets at the same time. Second, this study contributes to the theory about (in)congruent ambient scent effects by showing that when the scent functions as a mating cue, a pleasant incongruent scent positively influences consumer evaluations. Therefore, retailers selling products that help individuals signal their physical attractiveness (e.g. clothing, jewellery, and lingerie stores) can make use of pleasant gender-incongruent perfumes to heighten the store's appeal.

### ACKNOWLEDGEMENTS

The authors thank Brett Sansom for his help in the data collection. The work in this article was supported by a grant from the Research Foundation Flanders (FWO Vlaanderen).

### BIOGRAPHICAL NOTES

*Lieve Doucé* is a PhD candidate at the Marketing Research Group of Hasselt University, Belgium. Her research focuses on fragrance marketing. More specifically, she investigates the influence of ambient fragrance on shopping behaviour, taking into account the possible moderating role of non-atmospheric cues as well as interaction of fragrance with other atmospheric cues.

*Wim Janssens* holds a PhD in Applied Economics (University of Antwerp, Belgium) and is an assistant professor in the Faculty of Business Economics at Hasselt University. His research topics include marketing communications and consumer behaviour with a special focus on multi-sensory and cross-modal marketing. He is a member of the editorial board of the *International Journal of Advertising*. His research has been published in, among others, the *Journal of Advertising*, *Journal of Environmental Psychology*, the *Journal of Business Research*, and *Environment and Behavior*.

*Sara Leroi-Werelds* is a postdoctoral researcher in the Department of Marketing and Strategy at Hasselt University. She successfully defended her PhD on customer value in May 2013. She published in the Marketing Science Institute Working Paper Series and in the *Journal of the Academy of Marketing Science*. Her research interests include customer value, service-dominant logic, service logic, resource integration, and value co-creation.

*Sandra Streukens* is associate professor of marketing at the Department of Marketing and Strategy at Hasselt University. Her research interests include value-based marketing, service employee management, and technology in services. Her work has been published in various international and peer-reviewed journals such as *Journal of the Academy of Marketing Science*, *Marketing Letters*, *Journal of Service Research*, *Long Range Planning*, and *Industrial Marketing Management*.

### REFERENCES

- Anderson JC, Gerbing DW. 1988. Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin* 103(3): 411–423.
- Anderson EW, Fornell C, Lehmann DR. 1994. Customer satisfaction, market share, and profitability: findings from Sweden. *Journal of Marketing* 58(3): 53–66.
- Babin BJ, Darden WR, Griffin M. 1994. Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research* 20: 644–656.
- Baumeister RF, Catanese KF, Vohs KD. 2001. Is there a gender difference in strength of sex drive? Theoretical views, conceptual distinctions, and a review of relevant evidence. *Personality and Social Psychological Review* 5: 224–273.
- Bitner MJ. 1992. Servicescapes: the impact of physical surroundings on customers and employees. *Journal of Marketing* 56(2): 57–71.
- Bolton RN, Drew JH. 1991. A multistage model of customers' assessments of service quality and value. *Journal of Consumer Research* 17(4): 375–384.
- Bone PF, Ellen PS. 1999. Scent in the marketplace: explaining a fraction of olfaction. *Journal of Retailing* 75: 243–262.
- Bone PF, Jantrania S. 1992. Olfaction as a cue for product quality. *Marketing Letters* 3(3): 289–296.
- Bosmans A. 2006. Scents and sensibility: when do (in)congruent ambient scents influence product evaluations? *Journal of Marketing* 70(July): 32–43.
- Brengman M, Willems K, Joye Y. 2012. The impact of in-store greenery on customers. *Psychology & Marketing* 29(11): 807–821.
- Briand G, Prass B. 2010. Lighting and perceived temperature: energy-saving levers to improve store evaluations?. In Campbell MC, Inman J, Pieters R (eds). *Advances in Consumer Research* Vol. 37, Association for Consumer Research: Duluth; 312–318.

- Buss DM, Schmitt DP. 1993. Sexual strategies theory: an evolutionary perspective on human mating. *Psychological Review* 100(2): 204–232.
- Capparuccini O, Berrie CP, Mazzatenta A. 2010. The potential hedonic role of olfaction in sexual selection and its dominance in visual cross-model interactions. *Perception* 39(10): 1322–1329.
- Cronin JJ Jr, Brady MK, Hult GTM. 2000. Assessing the effects of quality, value, and customer satisfaction on consumer behavioural intentions in service environments. *Journal of Retailing* 76(2): 193–218.
- Diamantopoulos A, Winklhofer HM. 2001. Index construction with formative indicators: an alternative to scale development. *Journal of Marketing Research* 38(2): 269–277.
- Doucé L, Janssens W. 2013. The presence of a pleasant ambient scent in a fashion store: The moderating role of shopping motivation and affect intensity. *Environment & Behavior* 45(2): 215–238.
- Doucé L, Poels K, Janssens W, De Backer C. 2013. Smelling the books: the effect of chocolate scent on purchase-related behaviour in a bookstore. *Journal of Environmental Psychology* 36: 65–69.
- Du S, Bhattacharya CB, Sen S. 2007. Reaping relational rewards from corporate social responsibility: the role of competitive positioning. *International Journal of Research in Marketing* 2: 224–241.
- Feingold A. 1992. Gender differences in mate selection preferences: a test of the parental investment model. *Psychological Bulletin* 112(1): 125–139.
- Ferguson MJ. 2008. On becoming ready to pursue a goal you don't know you have: effects of nonconscious goals on evaluative readiness. *Journal of Personality and Social Psychology* 95(6): 1268–1294.
- Ferguson MJ, Bargh JA. 2004. Liking is for doing: the effects of goal pursuit on automatic evaluation. *Journal of Personality and Social Psychology* 87(5): 557–572.
- Fornell C, Larcker DF. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1): 39–50.
- Friedman HH, Dipple WS. 1978. The effect of masculine and feminine brand names on the perceived taste of a cigarette. *Decision Sciences* 9(3): 467–471.
- Gallarza MG, Gil-Saura I. 2006. Value dimensions, perceived value, satisfaction and loyalty: an investigation of university students' travel behavior. *Tourism Management* 27(3): 437–452.
- Gallarza MG, Gil-Saura I, Holbrook MB. 2011. The value of value: further excursions on the meaning and role of customer value. *Journal of Consumer Behaviour* 10: 179–191.
- Gulas CS, Bloch PH. 1995. Right under our noses: ambient scent and consumer responses. *Journal of Business and Psychology* 10(1): 87–98.
- Hair JF, Ringle CM, Sarstedt M. 2011. PLS-SEM: indeed a silver bullet. *Journal of Marketing Theory and Practice* 19(2): 139–151.
- Hair JF, Hult GTM, Ringle CM, Sarstedt M. 2014. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage: Thousand Oaks.
- Holbrook MB. 1999. *Consumer Value: A Framework for Analysis and Research*. Routledge: London.
- Janssen E, McBride KR, Yarber W, Hill BJ, Butler SM. 2008. Factors that influence sexual arousal in men: a focus group study. *Archives of Sexual Behaviour* 37: 252–265.
- Janssens K, Pandelare M, Van den Bergh B, Millet K, Lens I, Roe K. 2011. Can buy me love: mate attraction goals lead to perceptual readiness for status products. *Journal of Experimental Social Psychology* 47: 254–258.
- Jarvis CB, MacKenzie SB, Podsakoff PM. 2003. A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research* 30(2): 199–218.
- Jones MA, Reynolds KE, Arnold MJ. 2006. Hedonic and utilitarian shopping value: investigating differential effects on retail outcomes. *Journal of Business Research* 59: 974–981.
- Kamakura WA, Mittal V, de Rosa F, Mazzon JA. 2002. Assessing the service profit chain. *Marketing Science* 21: 294–317.
- Karremans JC, Verwijmeren T, Pronk TM, Reitsma M. 2009. Interacting with women can impair men's cognitive functioning. *Journal of Experimental Social Psychology* 45: 1041–1044.
- Korichi R, Pelle-de-Queral D, Gazano G, Aubert A. 2008. Why women use makeup: implication of psychological traits of makeup functions. *Journal of Cosmetic Science* 59: 127–137.
- Krishna A, Lwin MO, Morrin M. 2010. Product scent and memory. *Journal of Consumer Research* 37: 57–67.
- Lai F, Griffin M, Babin BJ. 2009. How quality, value, image, and satisfaction create loyalty at a Chinese telecom. *Journal of Business Research* 62(10): 980–986.
- Leroi-Werelds S, Streukens S, Brady MK, Swinnen G. 2014. Assessing the value of commonly used methods for measuring customer value: a multi-setting empirical study. *Journal of the Academy of Marketing Science* 42: 430–451.
- Lindqvist A. 2012. How is commercial gender categorization of perfumes related to consumers preference of fragrances? *Procedia-Social and Behavioural Sciences* 65: 370–374.
- MacKenzie SB, Podsakoff PM, Jarvis CB. 2005. The problem of measurement model misspecification in behavioral and organizational research and some recommended solutions. *Journal of Applied Psychology* 90(4): 710–730.
- Maner JK, Gailliot MT, DeWall CN. 2007. Adaptive attentional attunement: evidence for mating-related perceptual bias. *Evolution and Human Behaviour* 28: 28–36.
- Mattila AS, Wirtz J. 2001. Congruency of scent and music as a driver of in-store evaluations and behaviour. *Journal of Retailing* 77(2): 273–289.
- Mehrabian A, Russell JA. 1974. *An Approach to Environmental Psychology*. The MIT Press: Cambridge, MA.
- Milinski M, Wedekind C. 2001. Evidence for MHC-correlated perfume preferences in humans. *Behavioural Ecology* 12(2): 140–149.
- Miller SL, Maner JK. 2010. Scent of a woman. Men's testosterone responses to olfactory ovulation cues. *Psychological Science* 21(2): 276–283.
- Mitchell DJ, Kahn BE, Knasko SC. 1995. There's something in the air: effects of congruent or incongruent ambient odour on consumer decision making. *Journal of Consumer Research* 22 (September): 229–238.
- Morrin M, Ratneshwar S. 2003. Does it make sense to use scents to enhance brand memory? *Journal of Marketing Research* 40 (February): 10–25.
- Morrison M, Gan S, Dubelaar C, Oppewal H. 2011. In-store music and aroma influences on shopper behaviour and satisfaction. *Journal of Business Research* 64: 558–564.
- Nunnally JC, Bernstein I. 1994. *Psychometric Theory*. McGraw-Hill: New York.
- Ohtani K. 2000. Bootstrapping  $R^2$  and adjusted  $R^2$  in regression analysis. *Economic Modelling* 17(4): 473–483.
- Oliver RL. 1997. *Satisfaction: A Behavioural Perspective on the Consumer*. McGraw-Hill: New York.
- Patrick JF. 2002. Development of a multi-dimensional scale for measuring the perceived value of a service. *Journal of Leisure Research* 34(2): 119–134.
- Preacher K, Hayes A. 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behaviour Research Methods* 40(3): 879–891.
- Rantala MJ, Eriksson CJP, Vainikka A, Kortet R. 2006. Male steroid hormones and female preference for male body odor. *Evolution and Human Behavior* 27: 259–269.
- Rintamäki T, Kuusela H, Mitronen L. 2007. Identifying competitive customer value propositions in retailing. *Managing Service Quality* 17: 621–634.

- Roney JR. 2003. Effects of visual exposure to the opposite sex: cognitive aspects of mate attraction in human males. *Personality and Social Psychology Bulletin* 29(3): 393–404.
- Ruiz DM, Gremler DD, Washburn JH, Carrión GC. 2008. Service value revisited: Specifying a higher-order, formative measure. *Journal of Business Research* 61(12): 1278–1291.
- Saad G. 2007. *The Evolutionary Bases of Consumption*. Lawrence Erlbaum: Mahwah, NJ.
- Sahmer K, Hanafi M, Qannari EM. 2006. Assessing unidimensionality within PLS path modeling framework. In Spiliopoulou M, Kruse R, Nürnberger A, Borgelt C, Gaul W (eds). *From Data and Information Analysis to Knowledge Engineering*. Springer Verlag: Heidelberg – Berlin; 222–229.
- Sánchez-Fernández R, Iñiesta-Bonillo MA, Holbrook MB. 2009. The conceptualisation and measurement of consumer value in services. *International Journal of Market Research* 51(1): 93–113.
- Sherman E, Mathur A, Smith RB. 1997. Store environment and consumer purchase behaviour: mediating role of consumer emotions. *Psychology & Marketing* 14(4): 361–378.
- Slater SF. 1997. Developing a customer value-based theory of the firm. *Journal of the Academy of Marketing Science* 25(2): 162–167.
- Spangenberg ER, Crowley AE, Henderson PW. 1996. Improving the store environment: do olfactory cues affect evaluations and behaviours? *Journal of Marketing* 60(April): 67–80.
- Spangenberg ER, Grohmann B, Sprott DE. 2005. It's beginning to smell (and sound) a lot like Christmas: the interactive effects of ambient scent and music in a retail setting. *Journal of Business Research* 58(11): 1583–1589.
- Spangenberg ER, Sprott DE, Grohmann B, Tracy DL. 2006. Gender-congruent ambient scent influences on approach and avoidance behaviours in a retail store. *Journal of Business Research* 59(12): 1281–1287.
- Spence C, Puccinelli NM, Grewal D, Roggeveen AL. 2014. Store atmospherics: a multisensory perspective. *Psychology & Marketing* 31(7): 472–488.
- Streukens S, Wetzels M, Daryanto MA, de Ruyter K. 2010. Analyzing factorial data using PLS: application in an online complaining context. In Esposito Vinzi V, Chin XW, Henseler J, Wang H (eds). *Handbook of Partial least Squares. Concepts, Methods and Applications*. Springer: Berlin; 567–587.
- Sweeney JC, Soutar GN. 2001. Consumer perceived value: the development of a multiple item scale. *Journal of Retailing* 77(2): 203–220.
- Trivers RL. 1972. Parental investment and sexual selection. In Campbell BG (ed.). *Sexual Selection and the Descent of Man*. Aldine: Chicago; 136–179.
- Turley LW, Milliman RE. 2000. Atmospheric effects on shopping behaviour: a review of the experimental evidence. *Journal of Business Research* 49: 193–211.
- Urbaniak GC, Kilmann PR. 2003. Physical attractiveness and the “nice guy paradox”: do nice guys really finish last? *Sex Roles* 49: 413–426.
- Willems K, Leroi-Werelds S, Streukens S. 2012. Store personality as a source of customer value. *Proceedings of the Advances in Consumer Research, North-America* 40: 618–619.
- Wirtz J, Lee MC. 2003. An examination of the quality and context-specific applicability of commonly used customer satisfaction measures. *Journal of Service Research* 5(4): 345–355.
- Woodruff RB. 1997. Customer value: the next source for competitive advantage. *Journal of the Academy of Marketing Science* 25(2): 139–153.
- Zeithaml VA, Berry LL, Parasuraman A. 1996. The behavioural consequences of service quality. *Journal of Marketing* 60(2): 31–46.