# Master Thesis

# Psychology

---

# *"Effects of design aspects in advertising on odour perception of consumers"*

---

**Author: Kira Elke Neuschildkamp (s0117005)**

First supervisor: Dr. T. van Rompay

Second supervisor: Drs. V. S. Okken

**University of Twente, Enschede**

**May 2012**

## Abstract

This study examines the effects of design aspects in advertising on the odour perception of consumers. Research proved that visual design aspects of advertising affects consumer perceptions. Also, congruency of these design aspects plays a major role in transferring effects on consumer perceptions. Based on these findings, four hypotheses concerning the effects of design aspects (*flask shape, colour hue and slogan*) and the aspect of congruency on odour perception were created. To test the hypotheses, eight perfume advertisements composed of a 2 (*flask shape:* thin vs. thick) x 2 (*colour hue:* bright red vs. mild red) x 2 (*slogan:* like a tropical sun-bath vs. feel the spring) design were created as manipulation stimuli. Some of these attributes represent freshness and some sultriness. After seeing one of the eight advertisements, participants had to evaluate the odour of an unknown, neutral perfume. The results indicate that the design aspect *"flask shape"* strongly affects the odour perception of consumers, whereas the hypotheses concerning "*slogan"* and "*colour hue"* are only partly confirmed. Regarding the "*congruency"* hypothesis, it is demonstrated that congruent combinations of design aspects in advertising lead to better evaluations of the perfume odour than incongruent combinations. The limitations of this study, practical implications and suggestions for further research are discussed.

# 1. Introduction

Everyone can imagine how it is to walk through a major city: you walk along a main street and listen to the traffic. You are not in deep thought, just walking. Suddenly you notice an advertisement poster on your right. You stand still and face the poster. The advertisement shows a woman at the centre. She wears an attractive dress: a corsage and hold-ups. In the foreground, you can see a pink coloured perfume bottle. On the left, you can see the brand and the name of the perfume in different typefaces and colours. While observing the advertisement you get an idea of how the perfume smells. Then you walk further and keep the advertisement poster in your mind.

This just described scenario is a daily occurrence in our world. The world of advertising is big, advertising occurs across different domains, e.g. on television, in magazines or on billboards. The advertisement in the described scene is one example of advertising that is created to affect consumers' product evaluation through various stimuli. It is undisputed that this variety of design aspects concerning advertisements and products has a strong influence on how people perceive and evaluate the product. Pinson (1986) observed that people who buy unknown products make judgements about these based on their design. Fenko, Schifferstein and Hekkert (2010) confirmed this finding. They suggested that consumers often base their purchase decision on the product's visual appearance. Nussbaum (1988) acknowledged this with his finding about consumers who had to choose between two products equal in price. Consumers picked the one they perceived as more appealing. Cooper and Kleinschmidt (1987) showed that product design is the most important factor of sales success. Thus, the product's visual appearance affects consumers' different perceptions of the product. Related to this, Becker, van Rompay, Schifferstein and Galetzka (2011) demonstrated that taste perceptions of consumers can be affected by design aspects (such as

colour and shape) of products. So, the consumers' visual perception of design aspects is transferred to the consumers' taste impressions. Because of these findings, the present study focuses on testing if visual design aspects in advertising can affect odour perception. For this, eight perfume advertisements, which reflect the concepts of freshness and sultriness, were used to determine possible transfer effects on perfume evaluation. Important in creating the eight advertisements was the aspect of congruency, because congruency among design aspects in advertising elicits positive consumer responses (Veryzer, 1993) and facilitates processing fluency (Rompay & Pruyn, 2011). Thus, do congruent advertisements show other effects on odour perception than incongruent advertisements?

Summarizing, this study aims to see if design aspects in advertising can affect odour perceptions. Related to this, the aspect of congruency was kept in mind. In the following paragraphs, the components of this study are closer defined and explained.

### 1.1. Odour

Odours are present everywhere in our life. They are perceived by the sense of smell. At birth, the sense of smell is already completely developed. Humans can distinguish between roughly 10.000 odours. How much odours a person can identify correctly depends on personal experiences. Also, the genetic dispositions and cultural conditions determine the individual sense of smell. Odours can revive long-lost feelings and memories (Hatt & Dee, 2008). They can be either pleasant or unpleasant. For describing a pleasant odour, terms such as *"fragrance"* and *"aroma"* are used, whereas terms such as *"reek"* and *"stink"* are used for describing unpleasant odours.

Scientific research often implemented studies where the effect of odours on other stimuli or behaviours is described. An example is the study of Holland, Hendrik and Aarts (2005). They tested the effect of a cleaner with lemon fragrance on the cleaning behaviour of the

participants. The subjects were unaware of receiving the smell; they were instructed to play a computer game. The results showed that subjects exposed to the smell showed a higher cleaning behaviour than the other participants who were not exposed to it.

Thus, there are not many studies that examine the effect non-odour stimuli can have on the perceived attributes of odours. The present study aims to make additions to this field.

### 1.2. Product shape

One of the visual aspects examined in this study is the shape of a product. It is common that product shape is an important factor concerning consumers' perception of a product. For example, several scientists detected the impact of angular and rounded shapes on the evaluations of humans. Arnheim (1974) argued that angular shapes represent a confrontation between stimuli and surroundings on a person's perceptual level, whereas round shapes do not trigger this contradiction. In line with these findings, Zhang, Feick and Price (2006) suggested that the perception of angular and rounded shapes is dependent on a person's actual emotional state. The participants in their studies associated angular logos with conflict and aggressiveness as they reflect confrontation and rounded logos with harmony and gentleness as they reflect compromise. Bar and Neta (2006) explained these findings by humans' internal preference for curved objects. That humans draw consequences about product attributes based on product shape also was affirmed by van Rompay, Pruyn and Tieke (2009). They demonstrated that angular shapes generally are perceived as potent or masculine, whereas round shapes are seen as gentle, soft and feminine. Further, Becker et al. (2011) showed that the perception of shape can be transferred among the senses. They proved that the shape of a product affects taste perception.

Regarding these findings, the following question arises: Does the product shape also affect odour perceptions of humans? This is examined in the present study.

## 1.3. Colour

Another visual element applied in this study is the colour of a product. It is common that colours have a powerful effect on us and our life (Fiszman & Spence, 2011). Especially in the area of marketing they are important. Funk and Ndobisi (2006) demonstrated that several aspects, which were important concerning colours of products, are present. In their opinion, the product choice of humans depends on the following three aspects: the consumers' attitude towards colour, the attractiveness of the colour and the colour preferences of the consumer. Related to this, Cheskin (1957) mentioned that product choice happens consciously as well as unconsciously. For that reason, colour triggers the fastest purchase response (Fiszman & Spence, 2011). Fiszman and Spence (2011) also argued that colour has a stronger influence on human impressions than the brand name of the product. That perception of colour can also be transferred among the senses was examined by Clydesdale (1991). He observed that the colour of a product has an effect on taste impressions of humans. In his study, he showed that colour enhances the perception of flavour (e.g. sweetness, saltiness). This statement was confirmed by Wei, Ou, Lou and Hutchings (2011). They demonstrated that greenish juice colours elicit the tastes sourness and bitterness, whereas yellow juice colours elicit the taste sweetness and a stronger flavour in general. Based on these findings, the question arises if colour is able to affect the odour perception of humans. Lavin and Lawless (1998) approached this in their study. The relation of colour, smell and taste across children and adults was tested. For examining the connection between colour and smell precisely, the experimenter worked with different colour hues. The chosen basic colour was red, because it has a variety of associations (Lavin & Lawless, 1998). The results indicate that children judge a dark red colour as sweeter, whereas adults judge a light red colour as sweeter. Hsiao, Chiu and Chen (2008) added that pink and red colour hues are associated with feminine attributes, whereas blue and green hues are linked with masculine attributes. A possible explanation for this

behaviour is the gender stereotype, because female babies get red or pink dresses straight after birth, whereas male babies get blue or light blue clothes (Cunningham & Macrae, 2011).

Because of these findings, the idea of examining the affect of colour hues in advertising on odour perception in the present study emerged.

### 1.4. Slogan

Another element approached in this study is the slogan. Slogans are non-visual elements. They exist all over the world, e.g. the well-known slogans *"Yes, we can" (Barack Obama)* or *"Atomic power? No, thanks."* In advertising, slogans are regular features. Finding a suitable slogan requires consideration. Related to this, Nielsen, Shapiro and Mason (2010) detected that the content of slogans is important concerning the consumers' perception of the product. Slogans lying outside the area of focal attention were merely noticed when they contained emotional ad content. Including emotional words in ad headlines facilitated greater awareness of the headline and the advertised brands. Summarizing, the authors proved that emotions in slogans influence consumers' perception (Nielsen, Shapiro & Mason, 2010).

Because of these findings, the decision was made to examine in this study if slogans in advertising are able to influence the odour perception of consumers.

### 1.5. Congruency

Another factor considered in this study is congruency. Concerning advertising, the term implies that design elements are in harmony together. Several scientific studies exist showing that congruency among elements leads to a better evaluation of the product. Veryzer (1993) detected that consumer responses are positively affected by the congruency of product elements. Van Rompay and Pruyn (2011) added that congruency among product elements facilitates processing fluency. In general, fluent processing is evaluated positively, thus the

congruent design aspects are evaluated in positive terms (van Rompay et al., 2009). Contrary, incongruent design aspects disrupt fluent processing. Reber, Schwarz and Winkielman (2004) agreed and added that humans attribute terms of beauty and pleasantness to fluent stimuli what resulted in positive evaluations concerning the product and its brand name (van Rompay & Pruyn, 2011). That congruence among visual and non-visual elements in advertising leads to more positive evaluations of the product was proved by several scientists. Van Rompay, Pruyn and Tieke (2009) showed that congruence among the visual element shape and the textual element brand slogan affected the consumer responses positively. Van Rompay and Pruyn (2011) extended this finding by testing congruity among product shape and typeface. Congruency influences people to evaluate a product brand as more credible and more valuable than incongruence. The consumer response is also increased by perceiving a picture-text congruence (van Rompay, de Vries & van Venrooij, 2010). Thus, the impression formation process of the consumer is facilitated. This impression formation is hindered if a picture-text incongruence is perceived. Fiszman and Spencer (2011) added findings about congruency among colour and taste attributes of potato chips. They proved that consumers relate specific colours with specific flavours implicitly. The task was to pair colours and flavours and rate them as congruent or incongruent. By pairing the incongruent items, longer reaction times and more incorrect responses were recorded, whereas pairing the congruent items evoked shorter reaction times and more correct responses.

In contrast to all these findings, studies stating that incongruence of a product is preferred by some people, exist. Jones (1991) concluded that some humans need a moderate level of arousal in their life, which is elicited by incongruency. Thus, they prefer incongruent design elements in presented products.

Because of these findings, the aspect of congruency was added to this study.

## 1.6. Hypotheses

Based on the named scientific approaches, we establish the following four hypotheses:

**Hypothesis 1:** *A perfume flask, which represents freshness in advertising, leads to fresher evaluations of perfume odour. A perfume flask, which represents sultriness in advertising, leads to sultrier evaluations of perfume odour.*

**Hypothesis 2:** *The colour of a perfume flask, which represents freshness in advertising, leads to fresher evaluations of perfume odour. The colour of a perfume flask, which represents sultriness in advertising, leads to sultrier evaluations of perfume odour.*

**Hypothesis 3:** *A slogan inducing freshness in advertising, leads to fresher evaluations of perfume odour. A slogan inducing sultriness in advertising, leads to sultrier evaluations of perfume odour.*

**Hypothesis 4:** *Congruency of design aspects in advertising leads to better evaluations of the perfume odour than incongruency.*

# 2. Method

## 2.1. Pretest

The goal of the pretest was to obtain the stimulus material containing the intended attributes for the manipulations in the study's experiment. The pretest was conducted online, so the corresponding web address was sent to the participants. In total, 18 subjects participated in the pretest. Their task consisted of evaluating 6 different *flask shapes* [see Fig. 1], 5 *colour hues* [see Fig. 2] and 15 *slogans* [see Fig. 3] concerning their *freshness* and *sultriness*. The evaluations were assessed via thirteen 5-point Likert scales (ranging from *"not at all"* to *"completely"*) which had to be filled in for every stimulus. With these scales the participants should indicate how strong they associated the following thirteen attributes with the presented stimuli: *sporty, fiery, flowery, classical, erotic, smart, dominant, strong, sultry, heavy, exotic, intoxicating, sensual*. Some of these attributes should represent the concept of *freshness* (sporty, flowery) and some the concept of *sultriness* (classical, sultry, exotic, intoxicating, sensual). Further, to determine whether the chosen items reflect the intended concepts, a factor analysis was conducted. The concept of *sultriness* was best reflected by the items *erotic, sultry, exotic, intoxicating and sensual* ($\alpha = .87$). For the concept *freshness* the item *sporty* showed the most adequate representation. Other items were excluded from the analysis of stimulus evaluations for the main study.

Further, the results showed that the third pair of flasks [see Fig. 1: pair c] composed of a thin flask and its counterpart, a thick flask, best reflected the stated concepts. For the concept freshness the thin flask ($M = 3.00$, $SD = 1.28$) was seen as more fresh than its counterpart ($M = 1.33$, $SD = 0.59$). For the concept of sultriness, the thick flask showed good results ($M = 2.19$, $SD = 1.05$). A variance analysis confirmed these findings by showing that the two flasks

differ significantly concerning perceived sultriness (F (1, 35) = 10.81, p < .01) and freshness (F (1, 35) = 25.00, p < .001).

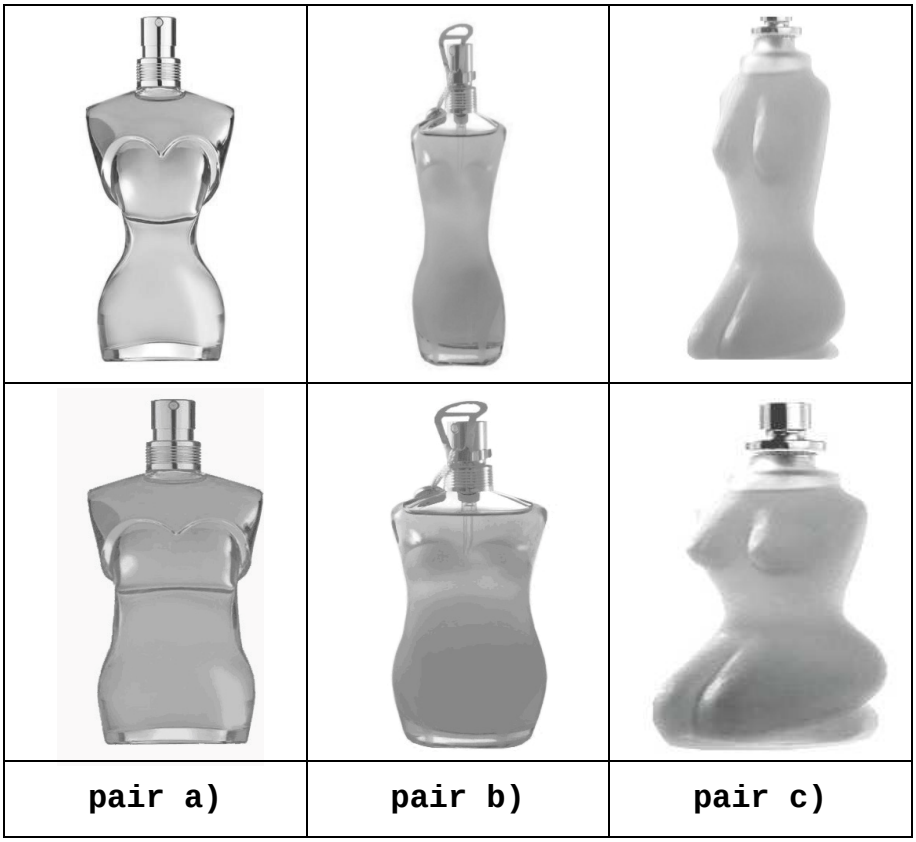



**Figure 1.** Flask shapes for the pretest

High ratings concerning the colour received a bright red [see Fig. 2: colour hue c] for the concept sultriness (M = 3.58, SD = 0.82) and a mild red [see Fig. 2: colour hue d],(M = 2.11, SD = 1.18) for the concept freshness. A variance analysis showed that the two colours differ significantly with regard to perceived sultriness (F (1, 35) = 14.18, p < .01) and freshness (F (1, 35) = 8.79, p < .01).

| | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
| **colour a)** | **colour b)** | **colour c)** | **colour d)** | **colour e)** |

**Figure 2.** Colour hues for the pretest

The results also showed that the slogan *"Feel the spring"* (M = 3.89, SD = 1.41) was associated with freshness, while the slogan *"Like a tropical sun-bath"* (M = 4.39, SD = 0.62) was associated with sultriness. Via variance analysis significant differences were found concerning sultriness (F (1, 35) = 18.13, p < .001) and freshness (F (1, 35) = 32.32, p < .001).

| |
|---|
| **"Catch the fever", "Earn the affection", "Feel the fire", "Like a summer's breeze", "Feel the spring", "A memoir of the senses", "The exotic sensation for you", "Have the power!", "Like a tropical sun-bath", "A mesmerizing open fire", "Dream of a hot summer's night", "Surrender to intoxication", "Cover yourself in a tropical blanket", "Intoxicating desire", "Let desire take you down"** |

**Figure 3.** 15 Slogans for the pretest

Based on the results of the pretest, the following eight advertising stimuli were created for the main experiment.

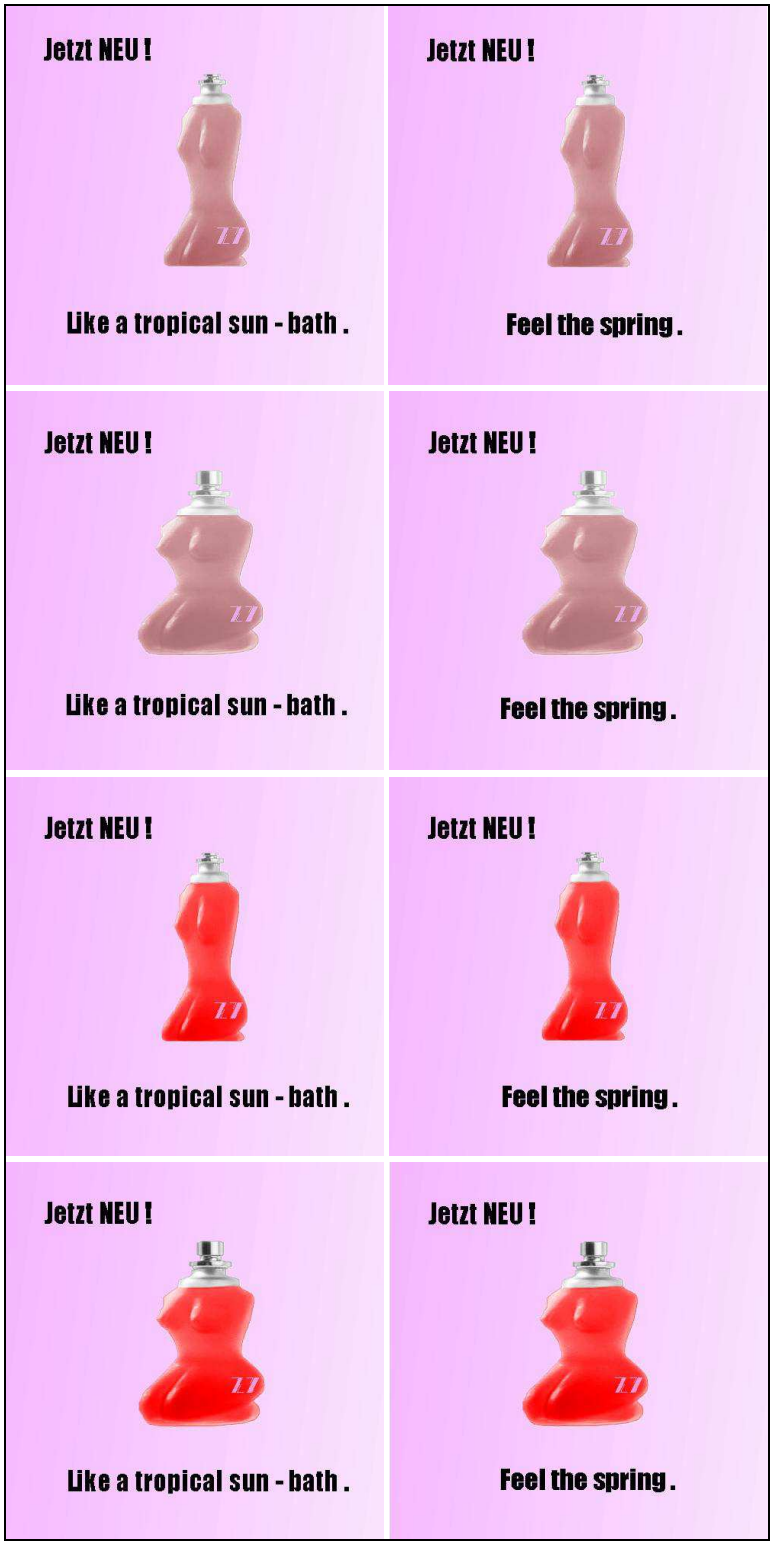



**Figure 4.** Stimuli for the main study

## 2.2. Main study

### 2.2.1. Participants and design

In total, 144 people participated in this study - 81 women and 63 men. The participants' age ranged between 18 and 81 (M = 37.11). They were collected in cities with many shops in the proximity. This study used the following between-subjects-design: 2 (*flask shape:* thick vs. thin) x 2 (*colour hues:* mild red vs. bright red) x 2 (*slogans:* feel the spring vs. like a tropical sun-bath). The aim of this study was to examine if and to what extent design aspects influenced consumers' odour perception.

### 2.2.2. Manipulation stimuli

Through the pretest, *flask shapes*, *colour hues* and *slogans* which showed good fitting with the concepts of *sultriness* and *freshness*, were obtained. Based on these findings, eight images of a perfume advertisement were created as manipulation stimuli for the main study [see Fig. 4]. Concerning the creating, some aspects had to be considered.

First, the illustrations had to look like real advertisements in order to reach a high credibility with the participants. To this end, all perfume flasks got the fictional logo *"Z7"*, which was always attached on the same position at the flask. Also, the feeling of seeing a real advertisement was intensified by placing the advertisement headline *"Out now!"* (German: *"Jetzt neu!"*) at the top.

Second, to avoid priming caused by the background, a neutral background colour was chosen for all illustrations. The colour *"light pink"* was chosen because of resemblance to the other red colour hues used in the advertisements shown here. Similarly, the fictive logo *"Z7"* was also coloured *"light pink"*.

The position of the flask in the advertisement was chosen consciously. It was placed centred, so that other aspects like the slogan had enough space to be placed.

This study focused on using *freshness* and *sultriness*, because these concepts are well-known counterparts related to odours of perfume. These two concepts should be represented by the combined stimulus variables *flask shape, colour* and *slogan*. The eight chosen illustrations were combined as followed [see Tab. 1]:

**Tabel 1.** Eight combinations for the main study

| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
|---|---|---|---|---|---|---|---|---|
| **Flask** | thin | thin | thick | thick | thin | thin | thick | thick |
| **Colour** | fresh | fresh | fresh | fresh | sultry | sultry | sultry | sultry |
| **Slogan** | sultry | fresh | sultry | fresh | sultry | fresh | sultry | fresh |

In the main study, participants had to assess the odour of an unknown perfume after seeing one of the advertisements. Hence, a perfume with an odour as neutral as possible was required for preventing an influence on priming. For this, another pretest was conducted. The results indicated that the antiperspirant *"Hidro-Fugal" (type: pressure sprayer)* was ideal for these purposes. Its odour was individual, but neither considered sultry nor fresh. For warranting the neutrality of this antiperspirant, the flacon was presented concealed to the participants.

### 2.2.3. Procedure

First, the subjects of this study were asked to participate. They were told to be part of a marketing study in which their opinion concerning an advertisement of a new perfume was required. So, the participants had no idea of the psychological purposes of this study. Then, a form was given to the participants. The participants were asked to fill in personal data (e.g. age, gender). Also, they were informed that answers were handled confidentially. Then, each person was uniformly at random assigned to one of the eight stimuli conditions. Thus, the

study started with showing one of the eight illustrations on a DinA4 sheet to the participants. Then, the experimenter explained that the illustration is an advertisement for a new perfume and that the following task contained the judgement of the corresponding odour (neutral). Afterwards, the participants were presented a sample of the perfume on a test strip. Then, the participants had to fill in a questionnaire (with Likert scales). Finally, they were thanked for attendance. The end of the study was obtained via debriefing of the subjects.

### 2.2.4. Measures

In the main study, the following items out of the two main groups of concepts offered high internal consistency and could be used in further analyses: for optimally representing the concept of *sultriness*, the five items *"sensual, sultry, intoxicating, exotic and erotic"* ($\alpha$ = 0.80) were verified. The concept of *freshness* was measured by means of the five items *"fresh, sporty, fizzy, energetic and airy"* ($\alpha$ = 0.81). By analysing the results of factor analyses, a third big concept could be determined: *perfume pleasure*. *Perfume pleasure* was represented best by the six items *"positive, exclusive, pleasant, chic, seductive and beautiful"* ($\alpha$ = 0.88). These measurements were assembled via 5-point Likert scales which the participants had to fill in (from left: 1 = *"not at all"* to right: 5 = *"completely"*), [see Attachment 1].

Furthermore, the variables *expected price* and *accepted price* of the perfume served as measures. The variable *expected price* was measured by instructing the participants to write down their opinion how much *"Euro"* the perfume cost at the shop (50 ml flask) and the variable *accepted price* was measured by instructing the participants to write down how much "*Euro"* they would expend maximally for a 50 ml flask of this product [see Attachment 2].

Another concept that was measured, was *purchase intention.* The participants had to determine if they would want to get *a free trial* of the perfume, if they *would buy* the perfume

and if they would rate the perfume as a *high quality product* (α = 0.74). These three items *"getting a free trial", "would buy perfume"* and *"high quality of perfume"* were assessed via 5-point Likert scales (from left to right: 1 = *no*, 2 = *rather not*, 3 = *maybe*, 4 = *rather yes*, 5 = *yes*), [see Attachment 3].

Finally, the participants received the advertisement again for evaluating the *graphical illustration* of the design - independent of the odour. By the help of the 5-point Likert scales which included the same items that represented the three concepts *sultriness, freshness* and *perfume pleasure* for the odour evaluation, the participants had to assess the design of the advertisement.

# 3. Results

## 3.1. Manipulation check

Several variance analyses (ANOVA's) were performed for finding out if the graphical illustrations of the advertisements really induced what they should invoke. First, an ANOVA with *flask shape, colour hue and slogan* as independent variables and the *advertisement sultriness* as dependent variable, was implemented. Contrary to the expectations, no significant main effects of *flask shape* ($F(1, 128) < 1$, ns), *colour hue* ($F(1, 128) = 1.09$, $p = .30$) *and slogan* ($F(1, 128) = 2.00$, $p = .16$) were obtained. Also, no significant interaction effects emerged between *slogan and colour* ($F(1, 128) < 1$, ns), *slogan and flask shape* ($F(1, 128) < 1$, ns) and *colour and flask shape* ($F(1, 128) = 1.47$, $p = .23$). Concerning *advertisement sultriness,* no three-way interaction effect between *flask shape, colour hue and slogan* was found ($F(1, 128) = 3.03$, $p = .08$).

Another ANOVA with the same independent variables and the *advertisement freshness* as dependent variable also showed – contrary to the expectations – no significant main effects ($F(1, 128) < 1$, ns), no significant two-way interactions ($F(1, 128) < 1$, ns) and no significant three-way interaction ($F(1, 128) = 2.40$, $p = .12$) of the stimuli.

In a further analysis, the *advertisement pleasure* was constituted as dependent variable, whereas the independent variables remained the same. Again, contrary to our expectations, significant main effects were missing for *flask shape* ($F(1, 128) < 1$, ns) as well as for *colour hue* ($F(1, 128) = 2.62$, $p = .11$) and *slogan* ($F(1, 128) = 2.79$, $p = .10$). Additionally, no significant two-way interaction effects were obtained for *slogan and colour* ($F(1, 128) < 1$, ns), *slogan and flask shape* ($F(1, 128) = 3.17$, $p = .08$) and *colour and flask shape* ($F(1, 128) = 1.14$, $p = .29$). However, a significant three-way interaction between *flask shape, colour hue and slogan* was discovered ($F(1, 128) = 10.27$, $p < .01$). More specifically detailed, this effect

showed that the *thin flask shape combined with a mild red colour and the slogan like a tropical sun-bath* was evaluated to be most pleasant (M = 3.61, SD = .66), whereas the combination of a *thick, bright red flask with the slogan feel the spring* was evaluated to be least pleasant (M = 2.67, SD = .86).

Summarizing, it could be assessed that the concepts did not bring out the desired effects. On this account, it was interesting to analyse further how the participants evaluated the odour of the perfume.

## 3.2. Odour perception

Again, several variance analyses (ANOVA's) were implemented to point up if the perceived concepts of the presented stimuli were transferred to the odour evaluation of the participants. In this section, the independent variables still remained *flask shape, colour hue and slogan*. The different concepts *sultriness, freshness and pleasure*, the *purchase intention* and the *price evaluation* in conjunction with the odour perception were used as dependent variables.

### 3.2.1. Sultriness, freshness and pleasure

In the first analysis, the concept of *sultriness* served as the dependent variable. Here, a significant main effect of *flask shape* ($F (1, 128) = 7.75$, $p < .01$) emerged. Contrary to our expectations, it was observable that participants who received an advertisement that contained a *thin flask* conceived the perfume as more sultry (M = 2.39, SD = .68) than subjects who received an advertisement which contained a *thick flask* (M = 2.09, SD = .64), [see Fig. 5]. No significant main effects of *colour hue* ($F (1, 128) = 3.33$, $p = .07$) and *slogan* ($F (1, 128) = 1.34$, $p = .25$) emerged. However, a significant interaction effect of *slogan and colour* appeared ($F (1, 128) = 16.42$, $p < .001$), showing that the combination of a *bright red colour*

*with the slogan like a tropical sun-bath* evoked a more sultry perception of the odour (M = 2.62, SD = .54) than the combination of a *mild red colour with the slogan like a tropical sun-bath* (M = 1.99, SD = .64). This effect is in line with our congruency hypothesis. Related to the slogan *feel the spring*, no effects were present [see Fig. 6]. Further, no other significant interaction effects were stated, neither for *slogan and flask shape* (F (1, 128) = 1.15, p = .28), nor for *colour and flask shape* (F (1, 128) < 1, ns), nor for *flask shape, colour and slogan* (F (1, 128) < 1, ns).

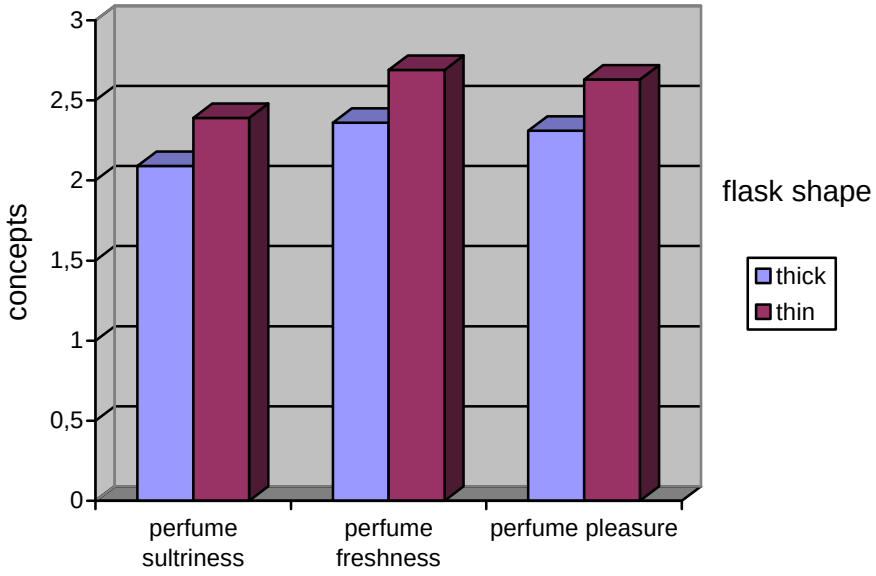



**Figure 5.** Main effects of flask shape on the concepts perfume sultriness, perfume freshness and perfume pleasure

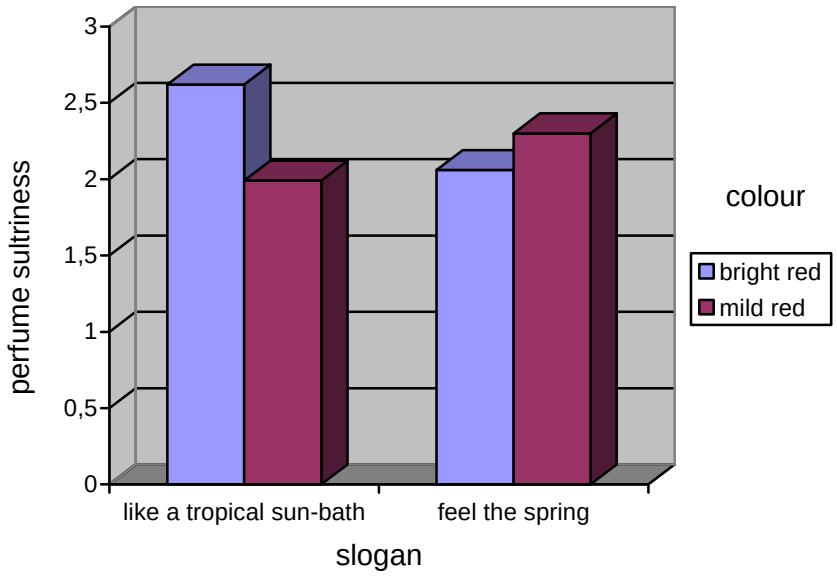



**Figure 6.** Interaction between colour and slogan on perfume sultriness

In further analysis, the variable *freshness* served as dependent variable. Repeatedly, a significant main effect of *flask shape* emerged ($F (1, 128) = 5.81$, $p < .05$), showing that people also evaluated the odour as fresher as the perfume flask was *thin* ($M = 2.69$, $SD = .82$) instead of *thick* ($M = 2.36$, $SD = .82$), [see Fig. 5]. This finding is in line with our first hypothesis. Significant main effects of *colour hue* and *slogan* were absent ($F (1, 128) < 1$, ns). However, a significant interaction effect of *slogan and flask shape* was shown ($F (1, 128) = 9.75$, $p < .01$). It was seen that the combination of the *thin flask with the slogan feel the spring* ($M = 2.89$, $SD = .77$) was rated as much fresher than the combination of the *thick flask with the same slogan* ($M = 2.15$, $SD = .78$). This is again in line with our congruency hypothesis. Concerning the other combinations, no effects could be assessed [see Fig. 7]. Also, other significant two-interaction effects were absent ($F (1, 128) < 1$, ns).

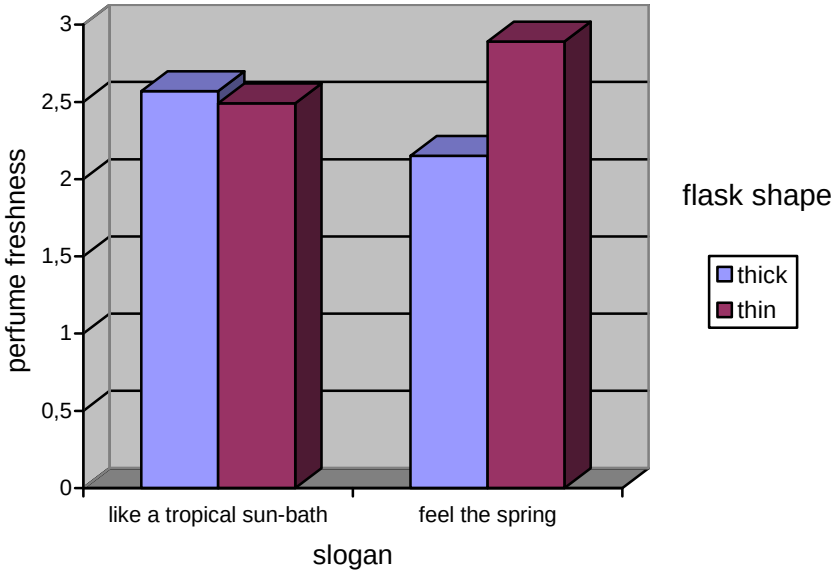



**Figure 7.** Interaction between flask shape and slogan on perfume freshness

However, a significant three-way interaction of *flask shape, colour hue and slogan* was assessed ($F (1, 128) = 8.77$, $p < .01$). Here, it was obvious that the combination of a *mild red colour with a thin flask and the slogan feel the spring* evoked the freshest odour perception ($M = 3.11$, $SD = .78$). The combination of a *bright red colour with a thick flask and the same slogan* induced least perception of freshness ($M = 1.89$, $SD = .88$). These findings are also in line with the congruency hypothesis.

In a further analysis, *perfume pleasure* was stated as dependent variable, whereas *flask shape, colour hue and slogan* still remained the independent variables. The results confirmed a significant main effect of *flask shape* ($F (1, 128) = 5.34$, $p < .05$). Participants rated the perfume as more pleasant as they was faced with the *thin flask shape* ($M = 2.63$, $SD = .76$) instead of *the thick flask shape* ($M = 2.31$, $SD = .89$), [see Fig. 5]. No other significant main effects were shown ($F (1, 128) < 1$, ns). Though, a significant interaction effect of *slogan and flask shape* was revealed ($F (1, 128) = 5.47$, $p < .05$), showing that the combination of a *thin flask with the slogan feel the spring* was rated as more pleasant ($M = 2.76$, $SD = .72$) than the

combination of a *thick flask with the same slogan* (M = 2.12, SD = .81). For combinations related to the slogan *like a tropical sun-bath*, no interesting differences could be determined [see Fig. 8]. Further, no significant interaction effects concerning *perfume pleasure* were found between *slogan and colour* and *colour and flask shape* (F (1, 128) < 1, ns).

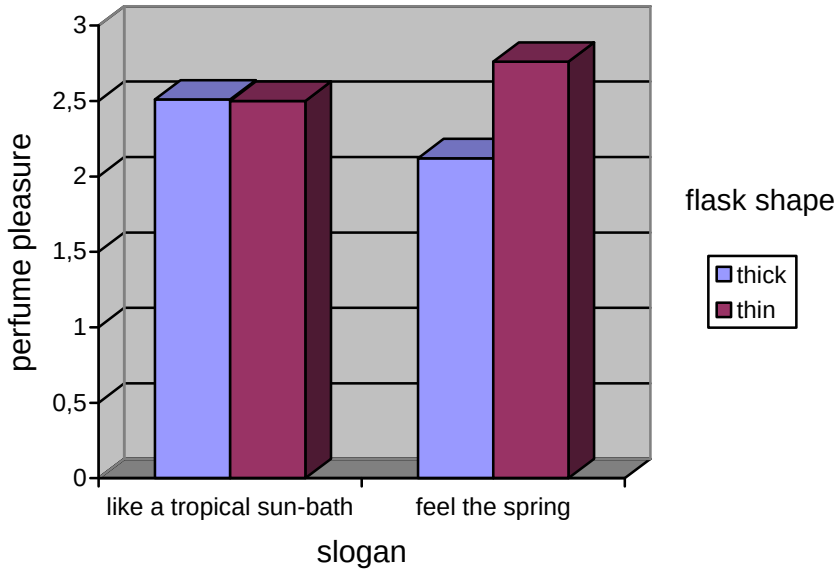



**Figure 8.** Interaction between flask shape and slogan on perfume pleasure

Regarding *perfume pleasure*, a significant three-way interaction of *flask shape, colour hue and slogan* appeared (F (1, 128) = 4.74, p < .05). It was revealed that the best combination for transferring pleasantness to the subjects' perfume evaluation was a *thin flask shape with a bright red colour and the slogan feel the spring* (M = 2.93, SD = .62). Contrary, least effective was the combination of a *thick flask with a bright red colour and the slogan feel the spring* (M = 1.88, SD = .95).

Summarizing, it was inferred that especially the aspect of *flask shape* was important for transferring a *sultry, fresh* or *pleasant* sensation from an advertisement to the evaluation of the appropriated perfume.

### 3.2.2. Purchase intention and price evaluation

It was continued with variance analyses. Concerning the *purchase intention* as dependent variable and the *flask shape, colour hue and slogan* as independent variables, a significant main effect of *colour hue* was present (F 1, 128) = 3.98, p < .05). This effect showed that the aspect of colour hue affected the intention of the subjects concerning the purchase of the product. The participants rather would buy the perfume as it was *bright red coloured* (M = 1.95, SD = .83) than *mild red coloured* (M = 1.70, SD = .71). Main effects of *flask shape* (F (1, 128) = 2.09, p = .15) and *slogan* (F (1, 128) < 1, ns) were absent, so these aspects were not influential concerning the *purchase intention* of consumers. Regarding *purchase intention*, a significant interaction effect of *flask shape and slogan* emerged (F (1, 128) = 7.47, p < .01). People most were affected by the advertisement containing a *thin flask connected with the slogan feel the spring* (M = 2.03, SD = .87), whereas the advertisement containing a *thick flask connected with the same slogan* (M = 1.49, SD = .61) least affected the purchase intention of the subjects [see Fig. 9].

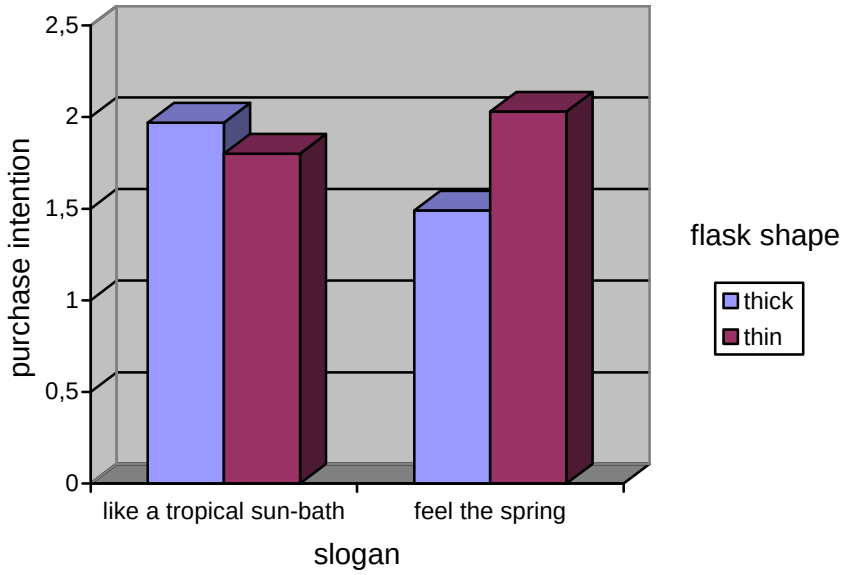



**Figure 9.** Interaction between flask shape and slogan on purchase intention

Further, a significant interaction effect of *flask shape and colour* was assessed (F (1, 128) = 4.33, p < .05), showing that the combination of a *thin flask with the bright red colour* more affected the *purchase intention* of consumers (M = 2.18, SD = .83) than a *thick flask with the same colour* (M = 1.73, SD = .78). The other alternatives showed no effects [see Fig. 10]. Concerning *purchase intention*, no significant interaction of *colour and slogan* (F (1, 128) < 1, ns) and no significant three-way interaction of *flask shape, colour hue and slogan* were visible (F (1, 128) = 1.89, p = .17).

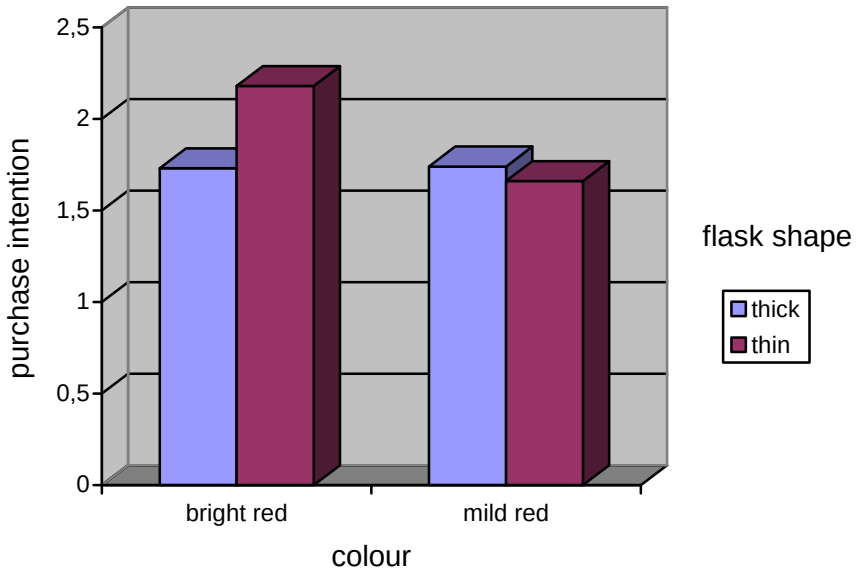



**Figure 10.** Interaction between flask shape and colour on purchase intention

More variance analyses concerning the *price evaluation* of the subjects were implemented. Regarding the *estimated price* as dependent variable and *flask shape, colour hue and slogan* as independent variables, no significant main effects could be obtained of neither *flask shape* (F (1, 128) < 1, ns), nor *colour hue* (F (1, 128) = 2.48, p = .12), nor *slogan* (F (1, 128) = 2.03, p = .16). Possible interactions of *slogan and colour* (F 1, 128) = 1.19, p = .28) *slogan and flask shape* (F (1, 128) < 1, ns) and *flask shape and colour* (F (1, 128) = 3.47, p = .07) also showed no effects on the *estimated price*. Also, no significant three-way interaction was

found (F (1,128) = 2.61, p = .11). The overall mean score for *estimated price* was 23.68 € (SD = 15.40).

Regarding the *accepted price* as dependent variable and the standard variables as independent variables, two significant main effects were detected: *flask shape* (F (1, 128) = 6.35, p < .05) and *colour hue* (F (1, 128) = 5.34, p < .05). Subjects would expend more for a *thin perfume flask* (M = 13.83, SD = 11.07) than for a *thick perfume flask* (M = 9.58, SD = 10.24) and also more for a *bright red coloured flask* (M = 13.65, SD = 11.55) than for a *mild red coloured flask* (M = 9.76, SD = 9.73). Concerning the *accepted price*, no main effect of *slogan* was found (F (1, 128) = 1.29, p = .26). However, significant interaction effects of *slogan and colour* (F (1, 128) = 7.06, p < .01) and *slogan and flask shape* (F (1, 128) = 14.80, p < .001) were obtained. Related to the interaction of *slogan and colour*, subjects would pay the most money for the combination of *a bright red colour with the slogan like a tropical sun-bath* (M = 16.85, SD = 12.61), whereas for the combination of *a mild red colour with same slogan* would be paid least (M = 8.48, SD = 8.22), [see Fig. 11]. Furthermore, for the combination of a *thin flask with the slogan feel the spring* (M = 16.11, SD = 11.13) most would be paid, whereas subjects for the combination of a *thick flask with the same slogan* would pay least (M = 5.39, SD = 5.11), [see Fig. 12]. No significant interaction was stated between *colour and flask shape* (F (1, 128) < 1, ns). Regarding the *accepted price*, no significant three-way interaction of *flask shape, colour hue and slogan* was revealed (F (1, 128) < 1, ns). The overall mean score for the *accepted price* was 11.83 € (SD = 10.82).

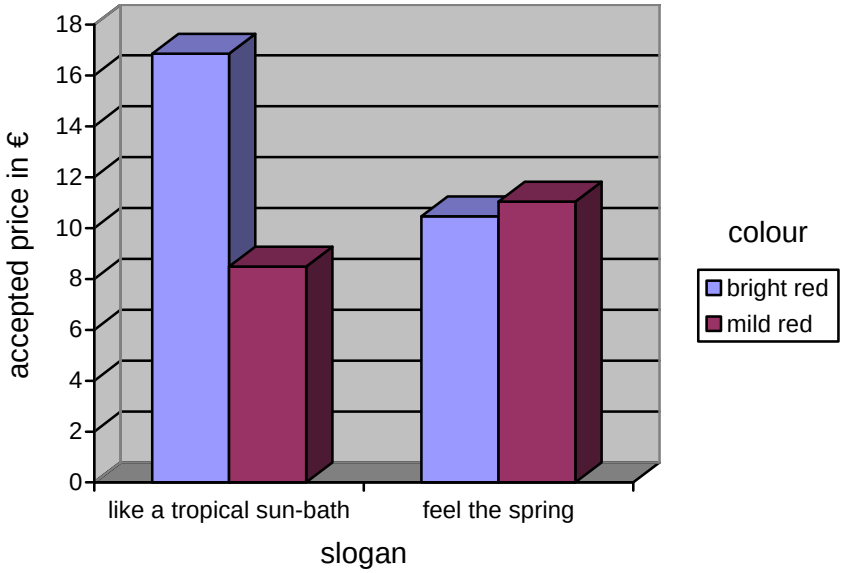



**Figure 11.** Interaction between colour and slogan on accepted price

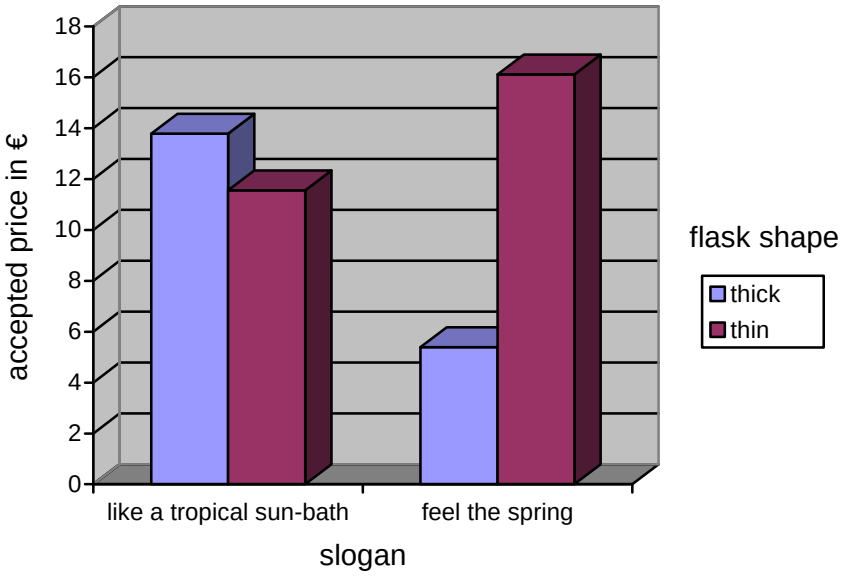



**Figure 12.** Interaction between flask shape and slogan on accepted price

Summarizing, it was assessed that *colour hue* had an effect on the *purchase decision* of consumers: a perfume with a *bright red coloured flask* would rather be bought. Also, it could

be concluded that consumers would pay more money for specific combinations of design elements in advertising.

### 3.3. Gender

It was continued with variance analyses. Concerning the *advertisement evaluation*, no significant differences between *men* and *women* were determined on the domains of *advertisement sultriness* ($F (1, 134) < 1$, ns), *advertisement freshness* ($F (1, 134) = 3.16$, $p = .08$) and *advertisement pleasantness* ($F (1, 134) < 1$, ns).

Regarding the *perfume evaluation*, no significant effects of *gender* were found concerning *perfume sultriness* ($F (1, 134) = 1.23$, $p = .27$) and *perfume freshness* ($F (1, 134) = 1.57$, $p = .21$). However, related to *perfume pleasure*, a significant main effect of *gender* was stated ($F (1, 134) = 5.82$, $p < .05$). More specifically detailed, it was observable that *men* (MD = 2.67, SD = .75) rated the odour more pleasant than *women* (MD = 2.33, SD = .88). Concerning *purchase intention* ($F (1, 134) < 1$, ns), *expected price* ($F (1, 134) < 1$, ns) and *accepted price* ($F (1, 134) = 3.23$, $p < .08$), no significant differences between *men* and *women* emerged.

### 3.4. Age

For the analyses concerning *age*, three age groups were formed previously: *young age* (18-29 years, N = 58), *middle age* (30-49 years, N = 42) and *older age* (50-81 years, N = 36).

Concerning the *advertisement evaluation*, no significant main effects between the *age groups* apropos *advertisement sultriness* ($F (1, 133) < 1$, ns), *advertisement freshness* ($F(1, 133) < 1$, ns) and *advertisement pleasure* ($F (1, 133) = 1.25$, $p = .29$) were assessed.

Regarding *perfume evaluation*, further analyses were conducted. First, *perfume sultriness* served as dependent variable, whereas the *age groups* formed the independent variable. A significant main effect of *age* could be discovered ($F (1, 133) = 3.60$, $p < .05$), showing that

the *young age group* (MD = 2.39, SD = .62) rated the perfume as more sultry than the *middle age group* (MD = 2.26, SD = .69) and the *older age group* (M = 2.01, SD = .70). Regarding *perfume freshness,* another significant main effect of *age* was stated ($F (1, 133) = 3.62$, $p < .05$). This effect revealed that the *middle age group* (M = 2.73, SD = .81) evaluated the perfume as more fresh than the *young age group* (M = 2.58, SD = .75) and the *older age group* (MD = 2.24, SD = .93). Concerning the dependent variable *perfume pleasure*, no significant differences concerning the *age groups* were assessed ($F (1, 133) = 1.43$, $p = .24$). Regarding *purchase intention* ($F (1, 133) < 1$, ns), *expected price* ($F (1, 133) = 1.56$, $p = .22$) and *accepted price* ($F (1, 133) < 1$, ns), no significant differences between the *age groups* could be confirmed.

In summary, it can be stated that *gender* as well as *age* of the participants can affect their opinion concerning perfume evaluation.

## 4. Discussion

In the present study, it was investigated if design aspects of *perfume advertisements* affect the odour perception of consumers. With the aid of the *manipulation check*, it was assessed if the chosen aspects were evaluated in the intended way. Unfortunately, the assumed effects concerning *flask shape, colour hues* and *slogans* did not emerge. Thus, the design aspects did not attain the desired effects precisely. These findings are contrary to the results of the pretest. A possible explanation is that in the pretest the different aspects were presented isolated, whereas in the main study the design aspects were combined in the advertisings.

Concerning the *perfume evaluation*, the *first hypothesis* of this study that a flask shape, which represents freshness in advertising, leads to fresher perceptions of the perfume and a flask shape, which represents sultriness in advertising leads to sultrier perceptions of the perfume, was partly be confirmed. Regarding perfume freshness and perfume sultriness, main effects of flask shape were proved. Generally, it was indicated that a thin flask shape primed the concepts freshness and sultriness stronger than a thick flask shape. Unexpectedly, the thin flask was perceived as fresher, but also as sultrier than the thick flask. This is contrary to our hypothesis, because the thick flask, which was supposed to transfer the sultry concept, was not seen as sultry as the thin flask.

The *second hypothesis*, stating that a fresh colour hue leads to fresher perceptions of the perfume, whereas a sultry colour hue leads to sultrier perceptions of the perfume, could not be confirmed. Unexpectedly, concerning the concepts freshness and sultriness, significant effects of colour hue were absent, thus the second hypothesis remains unverified.

The *third hypothesis*, claiming that a slogan that induces freshness leads to fresher perceptions of perfume, whereas a slogan inducing sultriness leads to sultrier perceptions of the perfume, was also not confirmed. Regarding the concepts freshness and sultriness, the

aspect of slogan indeed shows an effect on perfume evaluation of consumers in combination with other aspects. But in general, the third hypothesis remains unverified.

The *fourth hypothesis,* stating that congruency leads to better evaluations of perfume odour, was confirmed. In the analyses concerning perfume sultriness, the *congruent combination* of a "*bright red with the slogan like a tropical sun-bath"* evoked the most sultry odour perception of consumers. Regarding *perfume freshness*, the *congruent combination* of a *"thin flask with the slogan feel the spring"* evoked the freshest odour evaluation. Also, the appropriated three-way interaction, consisting of the *congruent combination "a thin flask, a mild red and the slogan feel the spring",* elicited the most fresh odour perception. Thus, the results indicate that *congruent combinations* of design aspects lead to more positive evaluations of the perfume than *incongruent combinations.* This is in line with the findings of van Rompay et al. (2009) that congruence leads to positive evaluations of products and contradicting to the findings of Jones (1991) who stated that people prefer incongruent designs.

### 4.1. General discussion

After examining the results, some questions arise concerning the assessed effects and non-effects. First, why do the results of the *manipulation check*, contrary to our expectations, show no significance? Thus, concerning the concepts freshness and sultriness, no significant differences between a *thin flask* and a *thick flask*, a *mild red colour hue* and a *bright red colour hue* and the slogan *feel the spring* and the slogan *like a tropical sun-bath* could be constituted. One possible explanation regarding the failure of the *advertisement evaluation* to show signification is the time the manipulation check was set. The check was placed at the end of the experiment. It is known that the concentration of people decreases during a user study. Maybe participants did not consider the task careful enough, because the odour

evaluation before was more exciting. Thus, an alternative test scenario might be to insert a short break between the tasks for resuming the concentration of the participants.

Further, the findings concerning the *perfume evaluations* are analysed. Contrary to our expectations, the *thin perfume flask* was perceived as sultrier, but also as more fresh than the *thick flask.* A natural question is how the *thin flask* can be more influential in all instances? Some possible explanations are listed in the following. First, the presentation of thin models in the fashion industry might play a major role. In this context, recall magazines containing perfume advertisements. Perfumes are always presented by attractive and thin women or men. By seeing these examples, humans' personal ambitions are revealed, because they are reminded of an *"ideal" body*. This increases the desire for looking as good as the models, especially for women. Trampe, Stapel and Siero (2007) state that the comparison of a womens' body with other womens' bodies is affected by how satisfied they are with their own body. *"Body-dissatisfied"* women compare their bodies to a greater extent with other bodies than *"body-satisfied"* women. Because today a majority of women are dissatisfied with their bodies (Amaral et al., 2012), the comparison with the presented female perfume flasks is assumed to be high in the present study. Martin and Xavier (2010) added that women and men with an *"internal weight control belief"* (*"internals"* have a high emphasis on their body size) always prefer slim models. Concerning men, another reason for preferring the thin flask might be the following one: the usage of a female body flask in the advertisements. Here, the factor of attractiveness is a possible reason for evaluating the thin flask higher on all domains. Thus, self-evaluations and personal advantages of men and women seem to be possible explanations for the significant preference of the thin flask shape in all instances.

In further analysis, no effects of *colour and slogan* were detected. Nevertheless, a significant effect of *colour* was detected concerning the purchase intention of consumers, indicating that consumers preferred to buy the bright red coloured perfume instead of the mild

red coloured perfume. This is in line with the study of Funk and Ndobisi (2006) who detected a connection of colour with product choice. Regarding colour, the question arises why the study did not show more colour effects. One reason could be the handling with too few colours. In the present study, only the colour red was varied for colourising the perfume flasks. For receiving more precise effects concerning colours, the usage of a broader range of colour hues might be reasonable.

Concerning *slogan,* the findings of Nielsen, Shapiro and Mason (2010) are contrary to our results. They detected that people are more aware of emotionalised slogans than of other slogans. Nevertheless, the slogans in the present study were not emotionalized enough. In this context, the place of the slogan in the advertising was out of focal attention, so that the chance of overlooking the slogan was large. Some statements of participants after debriefing confirmed this suspicion ("*oh, I didn't recognize the slogan properly*"). Another reason why slogans showed no effects on odour perception is the comprehension of the English slogan. This was validated through some older participants asking the taskmaster for German translations of the slogans. In addition, some older participants asked repeatedly for a description of their task. This is reflected in the results by showing that the oldest group participants showed consistently lesser effects concerning odour perception than the two younger age groups.

Summarizing, the *advertisement evaluation* showed that some design effects did not affect in the intended way. Also, the hypotheses of this study are only partly confirmed. Thus, it is concluded that further research for gaining more insights into the effects of design aspects on odour perception, is necessary.

## 4.2. Suggestions for further research and practical implications

For further research concerning *design aspects in advertisements,* some suggestions are made. A first suggestion is to change parts of the manipulation stimuli. For example, concerning *colour*, different varieties could be implemented. Because Wei et al. (2011) demonstrated that greenish and yellow colours elicited different attributes of taste, it could be interesting to assess if handling other colours than red could transfer the impact of colour on odour perception. Further, concerning *slogans*, some variances might be interesting. For example, applying other font sizes (Nielsen et al., 2010) or typefaces (Rompay & Pruyn, 2011); (Moscheik, 2011), which reflect the concepts of freshness and sultriness, could intensify the whole impact of the manipulation stimuli. This might also reinforce the attention of the subjects concerning congruence of the design aspects. An additional aspect is to work with different backgrounds, which could intensify the representation of the concepts freshness and sultriness (e.g. a desert for sultriness and a waterfall for freshness). That different backgrounds affected product perception of consumers was proved by Mandel and Johnson (2002) and by Moscheik (2011). Also, the position of the brand logo could be a factor for assessing if a fresh or sultry odour perception is dependent on where the logo is placed in the advertisement. Pretesting a sultry or fresh message of the brand logo (e.g. via colour, typeface) and its positioning in the advertising could be a further step for improving congruency in the advertisements in the main experiment.

A further idea is to change aspects of the presented *perfume flask* itself. Because people are in interaction with the flask, it is interesting to include the other senses in further research. For example, the transparency of the flask could be changed, so that the visual sense is integrated. On the other hand, the material of the flask itself could be varied, so that the tactile sense is also included. Pretesting which aspects reflect the concepts of freshness and sultriness for completing the intended impressions and enhancing congruency in the main studies is

advisable. Thus, integrating other senses that gave the possibility of reinforcing the perception of the sultry or fresh concept of consumers might be beneficial. In this context, it could be interesting to assess the individual advantages - some people represent and prefer a fresh image and some a sultry image. Testing if these characteristics facilitate their odour perception of the appropriated concept congruently is another suggestion for further research.

Also, the aspect of *being a consumer* of a tested product category or not can have an impact on the results of a study. If participants are regular consumers of a product (e.g. perfume), the possibility of having a positive base attitude towards this product category exists. This could be stated via integrating questionnaires about the consumer behaviour of the participants in further studies.

It is also important to note that there might be *gender differences*. As described previously, the different self-evaluations and personal advantages of men and women must be considered. The opportunity of adding a perfume with a male flask shape for comparison could be an idea for further research.

Another aspect that could be considered is *age*. In the present study, our results state that age can affect the opinion of consumers concerning perfume evaluation. Further, it could be interesting if there exist connections between the age of participants and their preferences of different aspects of design (e.g. flask shape) in advertising. Are various age groups affected differently by several design elements? Further research can determine if there exists a correlation between age and the preference of different aspects of design.

Also, some suggestions concerning the *structure* of the study are made. Handling many participants is one aspect. In the present study, eight stimuli were presented to 144 subjects. Getting more subjects leads to better reliability and validity of the study, thus maybe more desired effects emerge.

If further research determines more significant effects concerning the impact of design aspects on odour perception, some *practical implications* would emerge. Every product field containing odour would benefit from these findings. Examples are the perfume industry, the cosmetics industry (e.g. body lotion, shampoo), the wellness industry (e.g. sauna smells) or cleaning articles (e.g. soap, detergent). The corresponding companies then have the advantage to create their products optimally for attaining accurate effects, thus increasing their sales.

## Literature


Amaral, A.D., Hernandez, R.N., Basabe, B.N., Rocandio, P.A.M. & Arroyo, I.M. (2012). Body satisfaction and diet quality in female university students from the Basque Country. *Endocrinol Nutrition, 59* (4), 239-245.

Arnheim, R. (1974). *Art and visual perception: A psychology of the creative eye*. Berkeley, CA: University of California.

Bar, M. & Neta, M. (2006). Humans prefer curved visual objects. *Psychological Science, 17* (8), 645-648.

Becker, L., van Rompay, T.J.L., Schifferstein, H.N.J. & Galetzka, M. (2011).Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations. *Food Quality and Preference, 22,* 17-23.

Cheskin, L. (1957). *How to predict what people will buy.* New York: Liveright.

Clydesdale, F. (1991). Meeting the needs of the elderly with the foods of today and tomorrow. *Nutrition Today,* 9, 13-20.

Cooper, R.G. & E.J. Kleinschmidt (1987). New Products: What separates Winners from Losers? *Journal of Product Innovation Management, 64* (3), 169-184.

Cunningham, S.J. & Macrae C.N. (2011). The colour of gender stereotyping. *British Journal of Psychology, 102* (3), 598-614.

Fenko, A., Schifferstein, H. N. J., & Hekkert, P. (2010). Shifts in sensory dominance between various stages of user-product interactions. *Applied Ergonomics, 41,* 34-40.

Fiszman, B. & Spence, C. (2011). Crossmodal correspondences in product packaging. Assessing color-flavour correspondences for potato chips (crisps). *Appetite, 57,* 753-757.

Funk, D. & Ndubisi, N.O. (2006). Colour and product choice: a study of gender roles, *Management Research News, 29* (1/2), 41-52.

Hatt, H. & Dee, R. (2008). *Das Maiglöckchen-Phänomen.* München: Piper.

Holland, R.W., Hendriks, M. & Aarts, H. (2005). Smells like clean spirit: Nonconscious effects of scent on cognition and behaviour. *Psychological Science, 16* (9), 689-693.

Hsiao, S.W., Chiu, F.Y. & Chen, C.S. (2008). Applying aesthetics measurement to product design. *International Journal of Industrial Ergonomics, 38,* 910-920.

Jones, T. M. (1991). Ethical decision making by individuals in organisations: An issue-contingent model. *Academy of Management Review, 16,* 366-395.

Lavin, J.G. & Lawless, H.T. (1998). Effects of color and odor on judgements of sweetness among children and adults. *Food Quality and Preference, 9* (4), 283-289.

Mandel, N. & Johnson, E.J. (2002). When web pages influence choice: Effects of visual primes on experts and novices. *Journal of Consumer Research, 29,* 235-245.

Martin, B.A.S. & Xavier, R. (2010). How do consumers react to physically larger models? Effects of model body size, weight control beliefs and product type on evaluations and body perceptions. *Journal of Strategic Marketing, 18* (6), 489-501.

Moscheik, M. (2011). The impact of design aspects in advertising on the perception of odor, including the role of ad scepticism. *University of Twente.*

Nielsen, J.H., Shapiro, S.A.& Mason, C.H. (2010). Emotionality and Semantic Onsets: Exploring Orienting Attention Responses in Advertising: *Journal of Marketing Research, 47,* 1138-1150.

Nussbaum, B. (1988). Smart design. *Business Week, 11,* 102-107.

Pinson, C. (1986). An implicit product theory approach to consumers' inferential judgements about products. *International Journal of Research in Marketing,* 3, 19-38.

Reber, R., Schwarz, N. & Winkielman, P. (2004). Processing Fluency and Aesthetic Pleasure: Is Beauty in the Perceiver's Processing Experience? *Personality and Social Psychology Review, 8* (4), 364-382.

Trampe, D., Stapel, D.A. & Siero, F.W. (2007). On models and vases: Body dissatisfaction and proneness to social comparison effects. *Journal of Personality and Social Psychology, 92* (1), 106-118.

Van Rompay, T.J.L., de Vries, P.W. & van Venrooij, X.G. (2010). More than Words: On the Importance of Picture–Text Congruence in the Online Environment. *Journal of Interactive Marketing, 24*, 22-30.

Van Rompay, T.J.L. & Pruyn, A.T.H. (2011). When Visual Product Features Speak the Same Language: Effects of Shape-Typeface Congruence on Brand Perception and Price Expectations. *Journal of Product innovation management, 28,* 599-610.

Van Rompay, T.J.L., Pruyn, A.T.H., & Tieke, P. (2009). Symbolic meaning integration in design and its influence on product and brand evaluation. *International Journal of Design, 3* (2), 19-26.

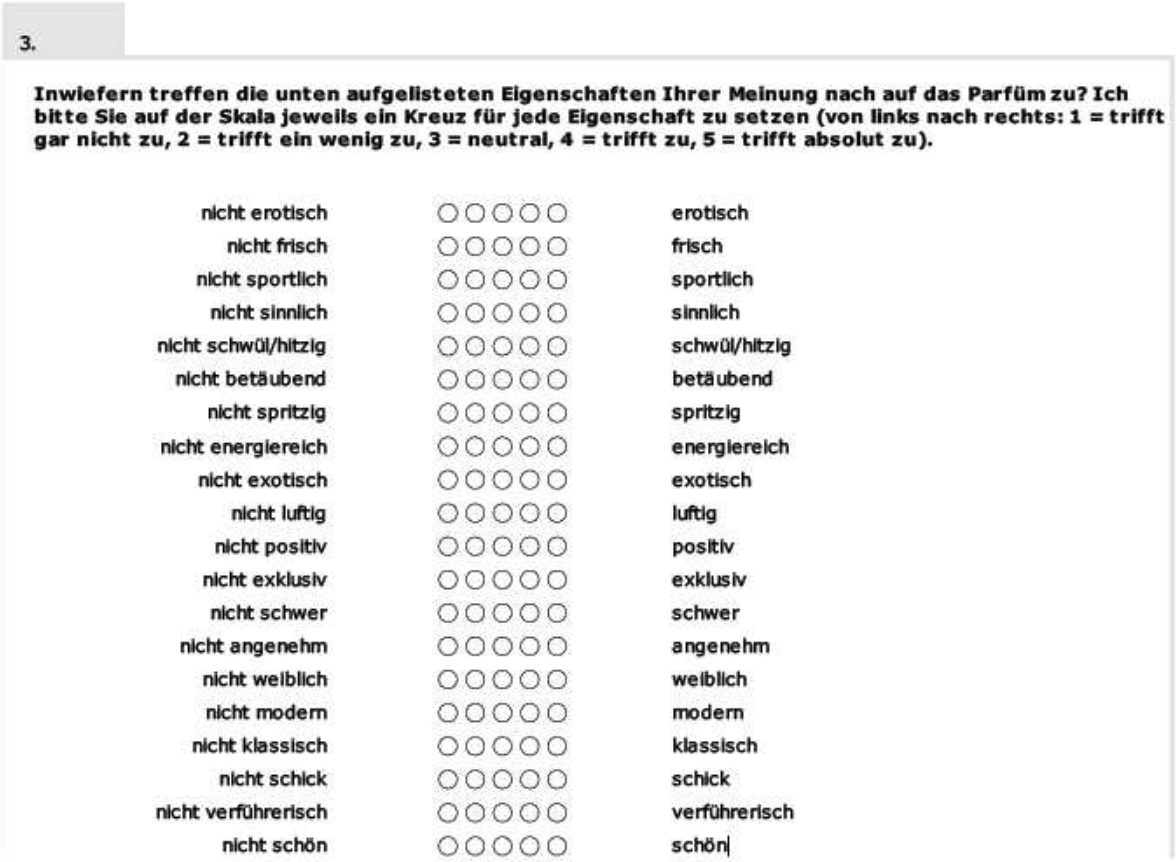
Veryzer, R.W. (1993). Aesthetic response and the influence of design principles on product preferences. *Advances in Consumer Research, 20* (1), 224-229.

Wei, S.-T., Ou, L.-C., Luo, M.R. & Hutchings, J.B. (2011). Optimisation of food expectations using product colour and appearance. *Food Quality and Preference, 23,* 49-62.

Zhang, Y., Feick, L., & Price, L. J. (2006). The impact of self-construal on aesthetic preference for angular versus rounded shapes. *Personality and Social Psychology Bulletin, 32* (6), 794-805.

# Attachments

## Scales



3.

**Inwiefern treffen die unten aufgelisteten Eigenschaften Ihrer Meinung nach auf das Parfüm zu? Ich bitte Sie auf der Skala jeweils ein Kreuz für jede Eigenschaft zu setzen (von links nach rechts: 1 = trifft gar nicht zu, 2 = trifft ein wenig zu, 3 = neutral, 4 = trifft zu, 5 = trifft absolut zu).**

| | | |
|---|---|---|
| nicht erotisch | ○○○○○ | erotisch |
| nicht frisch | ○○○○○ | frisch |
| nicht sportlich | ○○○○○ | sportlich |
| nicht sinnlich | ○○○○○ | sinnlich |
| nicht schwül/hitzig | ○○○○○ | schwül/hitzig |
| nicht betäubend | ○○○○○ | betäubend |
| nicht spritzig | ○○○○○ | spritzig |
| nicht energiereich | ○○○○○ | energiereich |
| nicht exotisch | ○○○○○ | exotisch |
| nicht luftig | ○○○○○ | luftig |
| nicht positiv | ○○○○○ | positiv |
| nicht exklusiv | ○○○○○ | exklusiv |
| nicht schwer | ○○○○○ | schwer |
| nicht angenehm | ○○○○○ | angenehm |
| nicht weiblich | ○○○○○ | weiblich |
| nicht modern | ○○○○○ | modern |
| nicht klassisch | ○○○○○ | klassisch |
| nicht schick | ○○○○○ | schick |
| nicht verführerisch | ○○○○○ | verführerisch |
| nicht schön | ○○○○○ | schön |

**Attachment 1.** Perfume evaluation/Manipulation check scale

4.

**Was schätzen Sie, wieviel dieses Parfüm (50 ml Flakon) im Laden kosten würde?**

5.

**Nun stellen Sie sich vor, Sie möchten sich dieses Parfüm (50 ml Flakon) kaufen. Wieviel Geld würden sie hierfür maximal bezahlen?**

**Attachment 2.** Price evaluation scale

6.

**Bitte kreuzen Sie für die folgenden 3 Fragen auf der Skala an, was am ehesten auf Sie zutrifft.**

| | Nein | Eher nicht | Vielleicht | Eher ja | Ja |
|---|---|---|---|---|---|
| Möchten Sie eine kostenlose Probe von diesem Parfüm erhalten? | ○ | ○ | ○ | ○ | ○ |
| Würden Sie dieses Parfüm kaufen? | ○ | ○ | ○ | ○ | ○ |
| Halten Sie dieses Parfüm für überdurchschnittlich hochwertig? | ○ | ○ | ○ | ○ | ○ |

**Attachment 3.** Purchase intention scale