IMPLICATION OF SPACIOUSNESS IN MARKETING:

Determining the influence of perceived spaciousness in printed advertisement on consumers' response

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Abstract

Many advertisers use various visual elements in their advertising to influence customers, such as color, shapes. Perceived spaciousness is one of the most important visual elements in the advertising. The previous studies showed perceived spaciousness have an impact on human being's openness and creativity (Okken, Rompay & Pruyn, 2013; Plambech & Konijnendijk van den Bosch, 2015;Rompay & Jol, 2016; Dawson, Hartwig, Brimbal, & Denisenkov, 2017). However, those prior studies didn't provide corresponding practical implications to advertising market and also lack insights in the impacts of perceived non-spaciousness (namely "focus"). The current study aims at exploring whether and how perceived spaciousness/focus in print advertisement affect customers' responses.

In this research, it has been hypothesized that a print advertisement with higher perceived spaciousness will increase consumers' spacious-related feelings such as open and creative. On the contrary, a print advertisement with higher perceived focus will increase focused-related feelings such as focused and attentive. Moreover, the effect of congruence between image and text in advertisement has also been examined. It was expected that congruency between picture and claim positively affect the consumers' perceived brand image.

To test these hypotheses, a 2 (image conditions: spaciousness versus focus) by 2(claim conditions: open versus focused claim) experimental designs were conducted. Additionally, to select the appropriate stimulus material for main experiment, a pre-test has also been done. The results of current research show that perceived spaciousness/focus from advertisement didn't influence consumers' feelings. Also, the influence of congruence between image and text on brand image was not obvious either. However, the result did show the spacious-related feelings perceived from advertisement positively affect brand image.

In general, the results of this experimental research have brought a new perspective to advertising industry, eventually helping marketer and advertisers attract consumers and promote brand.

Key words: pint advertisement; spaciousness; focus; openness; creativity; attention; congruence; brand attitude; brand trust.

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1. Introduction

Do you think something different than usual when you look at the big blue sky, or have you ever felt thrilled when standing in boundless grassland? Perhaps you have never noticed how largeness and extensiveness of space affect your mind and behavior, but living in cities of steel and concrete, we indeed need some room in our daily life to feel and to create. As a matter of fact, in recent years a great number of studies have paid attention to the influences of perceived spaciousness on human beings. Scientists even define spaciousness as 'a fundamental human need' (Stamps, 2008, p. 1). What's more important, perceived spaciousness affect the individual's cognition. For instance, scholars (Okken, Rompay, & Pruyn, 2013; Dawson, Hartwig, Brimbal, & Denisenkov, 2017) have found perceived spaciousness increases people's openness. What's more, studies (Plambech & Konijnendijk van den Bosch, 2015; Rompay and Jol, 2016) have shown spaciousness enhances individuals' creativity. In a word, spaciousness fulfills our physical needs and influences our feelings.

However, the previous research seldom applied the findings and theories concerning the impacts of spaciousness in practice, especially in the field of marketing. For example, do consumers perceive spaciousness from advertisement and associate their spacious-related feelings with the product? Since spaciousness is important, how about the opposite side of spaciousness (namely focus)? Does it also influence consumers' responses? In order to address these gaps in existing research, the present research aims at contributing to corresponding practical implications of perceived spaciousness/ focus to the field of print advertisement. To achieve this goal, the following research question needs to be answered: "What are the effects of perceived spaciousness from print advertisement on consumers' response?"

2. Literature Review

2.1 Ambience matters: the influence of print ads

In the field of marketing, it is well acknowledged that the ambience strongly influences customers, on both physical and psychological level. Much research has been done to investigate how multiple dimensions of the purchasing setting have affected people. For instance, it has been found that people behave differently given distinctive sounds (Sayin, Krishna, Ardelet, Decré, & Goudey, 2015; Meng, Zhao, & Kang, 2018), scent (Parsons, 2009; Lee, Kim, & Vohs, 2011; Doucé, Poels, Janssens, & Backer, 2013; Gvili, Levy, & Zwilling, 2017) and even temperature (Ijzerman & Janssen, 2014). All these studies have proved a classical theory of psychology about human behavior, which is known as Stimulus Organism Response (SOR). The theory suggests, "stimulation (S) and human response (R) are linked by an organismic component (O)" (Buxbaum, 2016, p.7). The SOR explains how external stimuli (e.g. retail environment) affected consumer's internal state (e.g. emotions) and therefore influence consumers' purchasing behavior (Chang, Eckman, & Yan, 2011). This theory also lays a theoretical foundation for the present research that focuses on the impacts of visual cues on customers' feelings and behavior.

One of important dimensions of ambience is visual dimension, as scientists have found that it is easier for human beings to process visual messages than other forms of information and therefore cause a better recall and recognition (Shepard, 1967;Demb, et al., 1995; Hockley, 2008). Moreover, many studies reported that visuals strongly influence individuals' beliefs, attitudes and behaviors (Rossiter & Percy, 1980; Gass & Seiter, 2011) by transmitting information (Suh, 1999). In the field of advertising, pictures are more effective than words to delivering message to viewers (Chau, Au, & Tam, 2000), and consequently marketers use various visual marketing strategies to attract customers, encouraging consumers *"imagine associate, fantasize or form expectations by visuals"* (Lohuis, 2015, p.10).

The print advertisement is the mostly common used way of product promotion. Even though the digital media is experiencing a massive upsurge, the demand Ffor print advertisement remains enormous. According to PwC 2017 Entertainment & Media Outlook annual report, Out-of-home advertising In United States is steadily growing, which has "has the strongest prognosis of the traditional media". And researchers have also found the importance of print advertising. For instance, it has been found that print advertising positively affects consumer purchasing behavior (Hee & Yen, 2018) and consumer's feedback on the brand (Janiszewski, 1990). As a result, most companies still employ the method of printed advertisement in their marketing tools. In print advertisement, the most two important elements are images and texts as these two elements appear in almost every print advertisement. According to Edell and Staelin (1983), the pictures in a print ad can change a consumer's brand attitude and purchase intention. Except for the effects of images, claims on advertisement also play an essential role. As an example, scholars (Bialkova, Sasse, & Fenko, 2016) have also presented the influence of printed advertising claims of food products on consumers' perceived healthiness of product and taste experience. When the message is delivered with both visual and verbal symbols, the ability of learning and remembering information is improved (Paivio, 1991). In other words, the simultaneous presence of images and texts raises the recognition of information, which is crucial in marketing. Therefore, the current research aims at finding the influence of images and claims displaying in a print advertisement. Furthermore, since very few studies have taken the relationship between image and slogan, in this case the congruence of two visual elements, into account.

2.2 How image influence consumers: The effects of spaciousness

Many scientific studies have shown that the characteristics of an image do influence human being's several cognitive functions. As case in point, colors can significantly affect human being (Elliot et al., 2007; Spence, 2010; Buechner et al., 2014). For example, people associate bright colors with positive emotion while dark colors are more connected with negative emotion (Hemphill, 1996). Closely, scientists have also found the relationship between shape and feelings. To give an instance, human beings connect the round shape with the feeling of gentle while the angular shape is more likely perceived as aggressiveness (Zhang, Price & Feick, 2006). What's more, visual materials (e.g. pictures and videos) including the elements of natural surroundings can make viewers feel less stressful (Beukeboom, Langeveld, & Tanja-Dijkstra, 2012; Keniger et al., 2013,) and have a better performance on task (Pilotti et al., 2015). In fact, a considerable number of similar research can be found in the field of visual marketing, however, there is one topic that has rarely been mentioned, which is the 'impact of perceived spaciousness in a picture on viewers. The primary objective of the present research is to reveal the mechanism of how perceived spaciousness on printed advertisement influences customers.

Spaciousness often refers to an area that has large space or room. It is most related by the words 'largeness' and 'extensiveness'. For instance, when seeing a mansion that has 9,000 square feet of floor space, people think it is spacious. Quite a few researchers have found that spaciousness is important for human beings and even defined spaciousness as 'a fundamental human need' (Stamps, 2008, p. 1). For example, Bharucha-Reid and Kiyak (1983) have suggested that large rooms were more favored by residents than small rooms. For the suburban areas in Randstad Holland, most housing consumers consider functionality and spaciousness of the house are to be of primary importance (Kauko, 2006). In a word, spaciousness plays a vital role in our daily life.

Furthermore, the concept of spaciousness is not only just physical but also mental. In fact, perceived spaciousness can influence individuals' thoughts and feelings. Researchers (Okken, Rompay & Pruyn, 2013) have discovered that the spaciousness of a room has a positive impact on people's self-expression. In the same manner, Dawson, Hartwig, Brimbal, & Denisenkov conducted an experiment in 2017, which has had respondents participate in investigative interviews in designed rooms with different settings in room space. The result of this study showed that participants in a spacious interview room were more open to talk about their opinions, compared to interviewees in a small room. In other words, perceived spaciousness make people more open. Base on these studies, it can be concluded that more spaciousness perceived from the environment, the more open people can be. The words 'open' here means a feeling of freedom. Apart from the strong relation between spaciousness and openness, perceived spaciousness also influences creativity. Scholars (Plambech & Konijnendijk van den Bosch, 2015) have found spaciousness, as one of the essential components of natural scenery, encourages creative thought. Moreover, Rompay and Jol (2016) have pointed out that the positive impacts of spaciousness on individuals' creative performance. Specifically, in this experimental study researchers displayed different images varying in spaciousness to students first in a high school, after that participants were asked to finish a drawing task and as well as filling in a survey to measure their perceived creativity. As a result, seeing images with more perceived spaciousness leads to higher selfreported creativity plus actual creativity (as measured by a creative drawing task). Thus, in the current research it can be hypothesized that:

H1: Imagery with higher perceived spaciousness on a print advertisement of a product enhances consumers' spacious-related feelings.

As shown above, there is much research about the influence of perceived spaciousness on people's mental performance, which has an important implication in print ads design.

When talking about spaciousness, people tend to conceptualize it as a continuum scale where there is plenty of room at one end. This research is also interested in what may happen at the other end. Similar to other ratio variables that the zero value is meaningful (such as 0 awareness or 0 income), we can define the opposite of spaciousness, 'nonspaciousness' or 'zero-spaciousness', as a landscape of a small enclosing area that closes off on all sides. To the extreme, this area would become so small, so that "0 spaciousness" can be reached. Visually, it can be represented by a focal point of our sight. In this case, negative values are not meaningful given the nature of spaciousness. In sum, the reasoning process indicates "non-spaciousness' in a picture doesn't only refer to the smallness and enclosure of space, but also includes the focus of a landscape. In present research, this concept of nonspaciousness is represented by the word "focus" for convenience sake. According to the spotlight model of attention (James, 1983), people generally pay more attention to the area using a focal point rather than the area outside the focal point. Considering the connection between focal point and focus, it is further assumed that people who perceive more focus might become more attentive, Therefore, in line with previous research focusing on the influence of spaciousness, this research proposed that:

H2: Imagery with higher perceived focus on a print advertisement of a product enhances consumers' focused-related feelings.

2.3 The effects of text and congruence

As mentioned in 2.1, this study simultaneously covers two elements of a print ad: picture and text. Therefore, the impacts of text on advertisement should also be considered. In past decades, numerous studies (Mitchell & Olson, 1981; Silayoi & Speece, 2007; Xu, Oh, & Teo, 2009; Siirilä, 2012) have shown that the informational messages used in advertising influence consumers' attitude and purchasing behavior. Scientists (Aschemann-Witzel & Hamm, 2010) have even found that consumers are fond of products with claims on the package rather than those without claims. As case in point, nutrition information on health food product enhances consumers' understanding of the nutritional content of the food (Grunert & Wills, 2007), and therefore health claims including favoured message on food packaging positively affect consumers' perceived healthfulness towards product and eventually encouraging the purchasing behavior (Kozup et al, 2003; Saba et al., 2010; van Trijp & van der Lans, 2007). Thus, using appropriate text on advertisement has become one of the most effective tools to shape consumers' mind and increase purchasing intention. The text in an advertisement is essential as well as images.

In last chapter the perceived spaciousness in image and its impacts have been discussed, but it is also important to know the effects of spaciousness in texts. For instance, would consumers feel open if the words such as "spacious" "open" used in advertising claims? And in the same way, would they feel focused when the words like "attentive" "focused" used in advertising claims? In order to answer those questions, hypotheses listed below were also examined in this research:

H3: Claims with higher perceived spaciousness on a print advertisement of a product enhances consumers' spacious-related feelings.

H4: Claims with higher perceived focus on a print advertisement of a product enhances consumers' focused-related feelings.

After raising novel ideas of exploring the effect of images and claims, a new dimension emerged: Congruence. Here, it refers to consistency between image and text regarding whether the meaning remains the same. The concept of congruence and its influences have been addressed in some other occasions that can inspire the current study. Previous studies have shown that the matching between presented images and texts in media message increases attention (McGill & Anand, 1989) and salience of content (Drew & Grimes, 1987; Graber, 1990; Lang, 1995). To put it in another way, this kind of congruence benefits the dissemination of information, which is important for advertising. Furthermore, Powell, Boomgaarden, Swert, & Vreese (2015) have found the factor that the meaning of an image is congruent with the message in the advertisement enhance the framing effects of advertisement. Likewise, Doctor Chang and Lee (2009) have reported that the congruence between text and image increases advertising effectiveness. One of functions of advertising is to developing brand image (Kirmani, 1990; Meenaghan, 1995), in other words, the effectiveness of the advertisement is closely related to brand image. As a consequence, congruence between text and image in the advertisement could influence brand image as The present research also aimed at inquiring into the relationship between well. congruence in advertisement and brand image, which was elaborated in the following chapter.

2.4 Brand image: concept and how to enhance it through print ads

Brand is the most valuable asset for a company (Kotler & Armstrong, 2018) and the concept of brand image refers to the sets of feelings, impressions or attitudes that the customers generally hold towards brands (Gardner & Levy, 1955; Dobni & Zinkhan, 1990). Establishing a strong brand image is not only one of fundamental marketing activities (Grubb & Grathwohl, 1967; Reynolds & Gutman, 1984; (Park, Jaworski, & MacInnis, 1986) but also the goal of organizations (Deheshti, et al., 2016), since it helps marketers achieve competitive advantage (Oxenfeldt & Swan, 1964; Santos-Vijande et al., 2013) and as well as purchase intention (Gardner & Levy, 1955; Delong et al., 2004; Ali, Ali, & Sherwani, 2017). Therefore, it is critical for companies to deliver a positive and strong brand image to customers.

Advertising has been viewed as a crucial method to help corporates develop their brand image (Kirmani, 1990; Meenaghan, 1995; Moorthy & Zhao, 2000) since it delivers the message about functional capabilities of brand and communicates consumers with brand's symbolic values and relevant meanings (Meenaghan, 1995). In short, advertising effectiveness affects brand image. Furthermore, considering "brand attitude"(Dobni & Zinkhan, 1990) and "brand trust" (Filo, Funk, & Alexandris, 2008) are the most important components of brand image, accordingly advertisement would also influence both concepts. Moreover, as explained in previous chapters, image and text are the most essential elements in an advertisement. As a result, the congruence between text and image in the advertisement would have a positive effect on advertising effectiveness (Chang & Lee, 2009). Therefore, the following hypotheses were set:

H5a: The congruence between image and text in print advertisement has a positive effect on consumers' perceived brand trust.

H5b: The congruence between image and text in print advertisement has a positive effect on consumers' perceived brand attitude.

In addition, there are also other factors affecting brand image, such as feelings and emotions. As an example, Ruth (2001) has concluded that "associating a brand with certain emotions influence brand and ad" and "a brand's emotional benefits can influence consumers' beliefs about the brand and brand attitudes" (p.2). For example, a sport car associated with excitement feeling is very likely to make people generate an impression that this brand is sharp and fearless. Moreover, different industries may require different brand impressions. In the same way, a study (Yoo & MacInnis, 1995) has indicated when customers feel positive about the advertisement they tend to have a positive evaluation on brand attitude.

Since perceived spaciousness from advertisement might lead to various feelings such as open (Okken, Rompay, & Pruyn, 2013; Dawson et al., 2017) and creative (Plambech & Konijnendijk van den Bosch, 2015; Rompay and Jol, 2016), which is generally recognized as positive feelings, this study simultaneously explores whether spacious-related feelings influence consumers' perceived brand image. On that account, the following hypotheses were generally assumed:

H6a: Perceived spacious-related feelings from print advertisement positively influence consumers' perceived brand trust.

H6b: Perceived spacious-related positively feelings from print advertisement positively influence consumers' perceived brand attitude.

Furthermore, the current studies would also like to investigate the effects of focused-related on brand image. Considering the focused-related feelings would be in opposite to openrelated feelings, hypotheses were proposed:

H7a: Perceived focused-related feelings from print advertisement negatively influence consumers' perceived brand attitude.

H7b: Perceived focused-related feelings from print advertisement negatively influence consumers' perceived brand attitude.

2.5 Control variables

To control the result bias influenced external variables and guarantee internal validity, three factors associated with consumers' response were concerned in current research, including advertisement liking (Gresham & Shimp, 1985; Muehling, 1987; Meenaghan, 1995; Chih-Chung, et al., 2012) and attention to advertisement (Mackenzie, 1986) and the liking of the product type (referring to ice-tea product used in present experiment). Therefore, these three variables were regarded as covariates in the present research, influencing consumers' feelings and their impressions on brand).

2.6 Research Model

In figure 1 an overview of the hypotheses, the dependent variables, independent variables and covariates is given.

Figure 1 Research Model



3. Methodology

The purpose of the present study was to explore and explain the impacts of perceived spaciousness and focus in a print advertisement on customer's response. To answer the research questions, a 2 (image with: high perceived spaciousness vs. advertisements with high perceived focus) x 2 (claim: focus claim vs. open claim) experimental design was conducted. And there were four dependent variables including consumer's spacious-related feelings, consumer's focused-related feelings, brand attitude, and brand trust.

3.1 Pre-test (Stimulus materials)

3.1.1 Procedure

The degree of both spaciousness and focus can be hard to define and classify. To determine the appropriate materials used in the main test, a pre-test was conducted. For pre-test, a digital questionnaire was designed and sent to 15 respondents aged from 18 -35, including both male and female. All participants were required to rate (using the 7-point Likert scale) 12 pictures (as shown in Figure 2) based on nine statements by answering how they agree on these statements. As an example, choosing "completely disagree" gets one point while choosing "completely agree" gets seven points. In addition, image 1, 2, 3, 4, 5 and 6 represented forest settings and image 7, 8, 9, 10, 11 and 12 represented water-related settings (as shown in Figure 2).

Moreover, the nine statements measured three constructs: perceived spaciousness, perceived focus and attractiveness. For an overview of all items, please see Appendix A. It is worth mentioning that attractiveness is an additional construct, which was added to control attractiveness of selected images since the difference in perceived attractiveness between stimulus materials might affect the result of the experiment.

After collecting responses and analyzing data, two images were selected as stimulus materials in the main experiment, one with the most "spacious" feeling and the other one with the most "focused" feeling.

Figure 2

Imagery varying in spaciousness/focus (Image numbers and experimental condition indicators correspond to those presented in Table 1)

Image 1 - 3Image 1 - 3Image 1 - 6Image 4 - 6Image 4 - 6Image 7 - 9Image 7 - 9Image 7 - 9Image 7 - 9Image 7 - 1Image 10 - 12Image 10 - 12Image 10 - 12

3.1.2 Results

The reliability test for each construct was conducted first. It was found that Cronbach's Alpha value of perceived spaciousness construct is high enough (alpha > 0.7) and there was nothing to fix. However, Cronbach's Alpha value of perceived focus construct is relatively low. Therefore, results of three items were excluded in construct, and only one most relevant item was kept to measure the construct.

Based on the results, images 3 and image 4 (see Fig. 2 and Table 1) were selected. There were several reasons why made this selection. First, there is a difference in spaciousness and focus between image 3 and image 4. Comparison of means verified that image 3 (mean = 4.67) was perceived as more "focused" compared to other images. In the meanwhile, image 4 (mean = 5.82), image 5 (mean = 5.95), and image 12 (mean = 5.95) were perceived as more spacious compared to other "spacious" images. However, only image 4 represented forest settings, which has a correspondence to image 3 and image 4. Therefore, it was better to choose image 4 as the most "spacious" image instead of image 5 and image 12.

In addition, the attractiveness of the two images is very close, which means the item "attractiveness" was controlled.

Table 1

Mean values of imagery for each experimental condition

Image	Condition	Spaciou	sness	Foc	us	Attractiv	eness
		Μ	SD	Μ	SD	М	SD
1	Forrest	4.68	1.21	4.47	1.12	5.60	1.24
2	Forrest	4.62	0.91	2.73	1.66	4.40	1.55
3	Forrest	4.17	1.25	4.67	1.05	5.40	1.24
4	Forrest	5.82	0.75	1.13	0.52	5.47	1.55
5	Forrest	5.95	1.24	1.6	1.60	5.73	1.53
6	Forrest	5.75	1.25	1.33	0.62	5.93	1.39
7	Water	3.85	1.21	4.53	2.066	4.47	2.03
8	Water	4.21	1.32	4.07	1.98	4.67	1.76
9	Water	5.75	1.09	1.73	0.96	6.00	1.20
10	Water	5.65	1.15	1.87	2.1	5.60	1.80
11	Water	5.25	1.15	1.67	1.80	5.13	1.73
12	Water	5.95	1.08	1.47	1.55	6.33	0.90

Additionally, no pre-test has been done for selecting advertising claim (on the poster) used in the main test. After discussing with the research team, two claims have been considered and eventually used in the main test. One is called "open your mind" (representing text with high spaciousness), and the other one is called "stay focused" (representing text with high focus).

3.2 Experimental design

This is experimental research. Participants were randomly sampled and assigned to the four groups receiving four conditions, 2 (image conditions: spaciousness versus focus) * 2 (claim conditions: open versus focused claim). Each group included 20 participants. The main task for respondents is to taste a small cup of drink, which was ice-tea, and fill in a survey based on their taste experience. What's worth mentioning, using ice-tea in this experiment is because ice-tea is a common soft drink that has a high acceptance among consumers.

Before starting task, a well-designed and printed poster (printed in A3 size) was shown to participant in each group, and participants were informed that the poster was the advertisement of the beverage that they would taste. In total there were four dissimilar posters (see Figure 3).

Figure 3

Four designed posters representing four conditions



Poster 3

Poster 3



3.3 Data collection

All sessions took place in the campus of University of Twente during the period between 22 January 2018 and 24 January 2018. Students and employees at the University of Twente were kindly invited to the study, and most of them were willing to participate. During the process of data collection, the method of random sampling was used. All the respondents were randomly selected. Besides, each poster (representing each condition) was also

randomly presented to participants. In other words, respondents were randomly assigned to four groups.

What's more, before doing task participants were explicitly told that the purpose of this beverage testing was to collect feedback on a new product that hadn't entered the Dutch market. However, it was just a 'cover story'. In fact, the testing product and its brand didn't exist in the world, which were fictional and made up by researcher. By doing so, respondents couldn't be biased. For the same purpose, all attendants were not allowed to ask questions concerning product and brand before finishing the task. After tasting the drink and filling in the survey, all the respondents were informed about the real purpose of research.

In addition, since ice tea is a type of sugary drinks, participants who could not normally digest sweet beverage, such as diabetic patients, were excluded from the experiment. Furthermore, it was guaranteed to all participants that the testing product was completely safe.

3.4 Respondents

In total 80 respondents participated in the experiment, 40 (50.0%) were female opposed to 40 male respondents in the age between 17 and 34 years old (M=21.92, SD=3.88). Furthermore, the number of female and male in each condition was compared (see table 2), and a chi-square test was conducted (see table 3). It was clear that the age and gender of respondents were equally distributed among the four experimental conditions.

Table 2

Number of female and male in each condition

Four experimental conditions	Gen	lder
	Female	Male
Spacious image x open claim	10	10
Spacious image x focused claim	10	10
Focused image x focused claim	10	10
Focused image x open claim	10	10

Table 3

Chi-Square Test

Value	df	Asymptotic Significance
		(2-sided)

Pearson Chi-Square	.00ª	3	1.00
Likelihood Ratio	.00	3	1.00
Linear-by-Linear Association	.00	1	1.00

3.5 Measurement

The current study used a questionnaire in an experimental situation to measure the consumers' responses. The questionnaire consisted of several parts, including respondents' demographic details such as age and gender. Various questions were raised to measure constructs used in the research, such as respondents' feelings towards the product, brand trust, and brand attitude. The table below gave an overview of each construct.

Table 4

Overview of constructs in the main test

Construct	Number	Measurement	Cronbachs' Alpha
	of items		
Perceived spacious-related feelings	4	7-point Likert	0.76
Perceived focused-related feelings	4	7-point Likert	0.81
Brand trust	3	7-point Likert	0.86
Brand attitude	4	7-point Likert	0.83
Advertisement liking	3	7-point Likert	0.88
Attention to advertisement	1	7-point Likert	Na
Liking of product type	1	7-point Likert	Na

Moreover, questions used to measuring constructs were listed in the following. See **Appendix B** for the complete questionnaire.

Perceived spacious-related feelings. Participants were asked to choose the degree that they agree with the statements below (scale anchors: "Completely disagree" versus "Completely agree"):

- "I have the feeling that test drink would make me feel open-minded"
- "I have the feeling that test drink would make me feel creative"
- "I have the feeling that test drink would make me feel imaginative"
- "I have the feeling that test drink would make me feel inspired"

Perceived focused-related feelings. Participants were asked to choose the degree that they agree with the statements below (scale anchors: "Completely disagree" versus "Completely agree"):

- "I have the feeling that test drink would make me feel focused"
- "I have the feeling that test drink would make me feel attentive"
- "I have the feeling that test drink would make me feel efficient"
- "I have the feeling that test drink would make me feel goal-oriented"

Brand trust. Participants were asked to choose the degree that they agree with the statements below (scale anchors: "Completely disagree" versus "Completely agree"): "I feel this brand is reliable"

- "I feel this brand is credible"
- "I feel this brand is convincing"

Brand attitude. Participants were asked to choose the degree that they agree with the statements below (scale anchors: "Completely disagree" versus "Completely agree"): "I feel this brand is attractive"

- "I feel this brand is interesting"
- "I feel this brand is appealing"
- "I will recommend this brand to my friends and family"

Except constructs relevant to hypothesis, three covariates were also considered and included to the survey.

Advertisement liking. Participants were asked to choose the degree that they agree with the statements below (scale anchors: "Completely disagree" versus "Completely agree"):

- "This advertisement is attractive"
- "This advertisement is interesting"
- "This advertisement is appealing"

Attention to advertisement. This perception was measured with the item "When buying new products, I always pay attention to advertisement of the products". 7-point Likert scale (scale anchors: "Completely disagree" versus "Completely agree") was used for record response.

Liking of product type. The product used in the experiment study was the ice-tea, therefore, this perception was measured with the item "To what extent do you like ice tea". Respondents evaluate the item with 7-point Likert scale (scale anchors: "Extremely dislike" versus "Extremely like").

4. Results

4.1 The effect of image and text on feelings

4.1.1 Perceived spacious-related feelings

The means of perceived spacious-related feelings for all four conditions were compared. The 40 participants in the spacious scenery condition had a mean of 4.24 (SD = 1.19), and the other 40 participants in the focused image condition had a mean of 4.58 (SD = 0.77). And the effect of imagery (F (1,76) = 2.02, p = 0.16) on spacious-related feelings was not significant, showing that spacious image did not enhance spacious-related feelings. Thus, **hypothesis 1 was rejected.** Similarly, the main effect of claim (F (1,76) = 0.18, p = 0.67) on spacious-related feelings was not significant either. It can be interpreted that claim with higher spaciousness didn't positively affect consumers' spacious-related feelings. Thus, **hypothesis 3 was rejected**.

Table 5

Descriptive statistics of four conditions on spacious-related feelings

Image	Claim	Mean	Std. Deviation	N
Spacious Image	Open claim	4.33	1.01	20
	Focused claim	4.15	1.37	20
	Total	4.24	1.19	40
Focused Image	Open claim	4.49	.65	20
	Focused claim	4.66	.89	20
	Total	4.58	.77	40
Total	Open claim	4.41	.84	40
	Focused claim	4.41	1.16	40
	Total	4.41	1.01	80

Table 6

Influence of independent variables on spacious-related feelings

		Mean			Partial Eta
Independent variable	df	Square	\boldsymbol{F}	Sig.	Squared
Scenery	1	1.72	.48	.62	.34
Claim	1	.16	.04	.87	.04
Scenery x Claim (Interaction)	1	3.31	3.89	.05*	.05

* p < 0.05

However, the analysis suggested a marginal interaction effect between image and claim (F (1,76) = 3.89, p = 0.05). Figure 4 illustrated the direction of this significant interaction effect for image and claim on spacious-related feelings. The figure showed that the scores in spacious-related feelings between open claim condition (M = 4.33, SD = 1.01) and focused claim (M = 4.15, SD = 1.37) condition were the most varied at the spacious image condition.

Figure 4

Interaction effect of image and text in advertisement on consumers' perceived spacious-related feelings



4.1.2 Perceived focused-related feelings

In the same fashion, the means of consumers' perceived focused-related among all conditions were also compared. In conclusion, there was no main effect of image on focused-related feelings (F (1,76) = 1.98, p = 0.16). Therefore, **hypothesis 2 was rejected**. Comparably, there was no significant difference between different levels of focus in advertising claim on focused-related feelings (F (1,76) = 0.76, p = 0.39), which means the main effect of claim didn't exist. Hence, **hypothesis 4 was rejected**. Additionally the

interaction effect (congruence versus incongruence) was not significant (F (1,76) = 0.56, p =

0.46).

Table 7

Descriptive Statistics of four conditions on focused-related feelings

Image	Claim	Mean	Std. Deviation	N
Spacious scenery	Open claim	3.99	.86	20
	Focused claim	3.83	1.44	20
	Total	3.91	1.17	40
Focused scenery	Open claim	4.29	.95	20
	Focused claim	4.25	.95	20
	Total	4.27	.94	40
Total	Open claim	4.14	.90	40
	Focused claim	4.04	1.22	40
	Total	4.09	1.07	80

Table 8

Influence of independent variables on focused-related feelings

Independent variable	df	Mean Square	F	Sig.	Partial Eta Squared
Scenery	1	1.86	3.88	.38	.85
Claim	1	.71	1.47	.49	.67
Scenery x Claim (Interaction)	1	.52	0.56	.46	.01

4.2 Brand image

4.2.1 The effects of congruence on brand trust

In order to test hypothesis 5a, a univariate analysis of variance (ANOVA) was used to investigate the interaction effect between image and claim (representing the effect of congruence) on brand trust. The result showed the effect of congruence on brand trust was not significant (F (1,73) = 0.35, p = 0.56). Otherwise speaking, congruence between image and text in advertisement did not have a positive effect on brand trust. Therefore, **hypothesis 5a was rejected.**

Additionally, there was no main effect of image (F (1,73) = 0.47, p = 0.50) and text (F (1,73) = 0.45, p = 0.51) on brand trust.

Table 9

Descriptive statistics of four conditions on brand trust

Congruence between image and text	Mean	Std. Deviation	N
Congruence (in spacious scenery)	4.35	1.18	20
Incongruence (in spacious scenery)	4.70	1.09	20
Congruence (in focused scenery)	4.80	1.07	20
Incongruence (in focused scenery)	4.72	.85	20

Table 10

Influence of independent variables on brand trust

		Mean			Partial Eta
Variable	df	Square	\boldsymbol{F}	Sig.	Squared
Scenery	1	.39	.47	.50	.01
Claim	1	.37	.45	.51	.01
Scenery x Claim (Congruence)	1	.29	.35	.56	.01

4.2.2 The effects of congruence on brand attitude

In parallel, the interaction effect between image and text (effect of congruence) on brand attitude (F (1,73) = 1.36, p = 0.25) was not significant either. The results indicated that congruence between image and text in advertisement didn't positively affect consumers' brand attitude. Therefore, **hypothesis H5b was rejected.**

In addition, there was no main effect of image (F (1,73) = 0.40, p = 0.53) and text (F (1,73) = 0.40, p = 0.53)

0.12, p = 0.73) on brand attitude.

Table 11

Descriptive statistics of four conditions on brand attitude

Congruence between image and text	Mean	Std. Deviation	N
Congruence (in spacious scenery)	4.89	1.17	20
Incongruence (in spacious scenery)	5.03	.91	20
Congruence (in focused scenery)	4.90	1.05	20
Incongruence (in focused scenery)	4.99	.75	20

Table 12

Influence of independent variables on brand attitude

		Mean			Partial Eta
Variable	df	Square	$oldsymbol{F}$	Sig.	Squared
Scenery	1	.23	.40	.53	.01
Claim	1	.07	.12	.73	.00
Scenery x Claim (Congruence)	1	.785	1.36	.25	.02

4.2.3 The effect of feelings on brand image

A linear regression analysis was conducted to explore the influence of customers' perceived spacious-related feelings from an advertisement on brand trust. As displayed in Table 11 and following graphics, perceived spacious-related feeling was a predictor of brand trust (t=2.75, p=0.01). In other words, more spacious-related feelings consumers perceived, more trust consumers have towards the brand. Therefore, **hypothesis 6a was confirmed**. Same with brand trust, the relation between brand attitude and spacious-related feelings was tested. The results (t = 4.47, p = 0.00) show that spacious-related feelings has a positive effect on brand attitude, with α = 0.05 level of significance. On that account, **hypothesis 6b was confirmed**. The same analysis was also used to examine the relation between focused-related feelings and brand attitude. However, the results showed that consumers' focused feelings didn't negatively influence brand image including brand trust (t = 1.701, p = 0.09) and brand attitude (t = 1.87, p = 0.66), which didn't meet the earlier expectation. Thus, **hypothesis 7a and 7b were rejected**. The related statistics and graph are reported below.

Table 10

Brand image predicted by consumers' feelings

Independent	Dependent				
variable	variable	R ²	$oldsymbol{F}$	t	Sig.
Spacious-related	Brand trust	.09	7.54	2.75	.01*
feelings	Brand attitude	.20	20.02	4.47	.00*
Focused-related	Brand trust	.04	2.89	1.70	.09
feelings	Brand attitude	.04	3.48	1.87	.07

* p < 0.05

Table 11

Summary of the result of all hypotheses

Hypotheses	Results							
H1	Rejected	Imagery with higher perceived spaciousness on a print advertisement of a product didn't enhance consumers' spacious-related feelings towards the product.						
H2	Rejected	Imagery with higher perceived focus on a print advertisement of a product didn't enhance consumers' focused-related feelings towards the product.						
H3	Rejected	Text with higher perceived spaciousness on a print advertisement of a product didn't enhance consumers' spacious-related feelings towards the product.						
H4	Rejected	Text with higher perceived focus on a print advertisement of a product didn't enhance consumers' focused-related feelings towards the product.						
H5a	Rejected	The congruence between image and text in print advertisement didn't have a positive effect on consumers perceived brand trust.						
H5b	Rejected	The congruence between image and text in print advertisement didn't have a positive effect on consumers perceived brand attitude.						
H6a	Confirmed	Perceived spacious-related feelings from print advertisement have a positive effect on brand trust.						
H6b	Confirmed	Perceived spacious-related feelings from print advertisement have a positive effect on brand attitude.						
H7a	Rejected	Perceived focused-related feelings from print advertisement have a negative effect on brand trust.						
H7b	Rejected	Perceived focused-related feelings from print advertisement have a negative effect on brand attitude						

5. Discussion

5.1 Conclusions

Related hypotheses were proposed based on previous studies indicating the connection between perceived spaciousness and people' feelings (Rompay & Jol, 2016; Plambech & Konijnendijk van den Bosch, 2015). However, the result of the current research didn't confirm the effect of perceived spaciousness/focus in print advertisement on consumers' feelings. There are two possible factors explaining the incongruence between current work and prior studies. First, the previous findings examined the spaciousness perceived from the environment instead of print media. As an example, in the experiment conducted by Dawson, Hartwig, Brimbal, & Denisenkov (2017), rooms varying in space were designed and used as a stimulus for exploring the impacts of perceived spaciousness from the environment on openness of self-expression. In such experimental design, the stimulus might get more recognition by participants and easily influence people. While in the present research, the stimulus used in the experiment is an A3 size poster, which may not have been large enough to stimulate respondents. As a result, respondents could not correctly perceive the spaciousness and focus from advertisement. Therefore, the effects of perceived spaciousness on consumers' spacious-related feelings are not evident.

Furthermore, during the process of data collection participants were informed that the purpose of survey was to collect feedback on a new ice tea product, and respondents should fill in the questionnaire based on their taste experience. This "cover story" of using ice tea was overwhelming, which made participants only focus on product rather than advertisement (conditions). Also, the wording of items in survey re-directed people's attention from ad (conditions) to drink. As an example, a question listed in questionnaire asked respondents how testing product would make them feel. Because of these questions consumers couldn't link their feelings to advertisement, and their responses were only related to product itself. Since the testing product used in four conditions was same, participants among four groups might response similarly. Therefore, there was no significant difference in consumers' feelings among four groups.

However, respondents' perceived spacious-feelings was marginally significant. It could be interpreted that consumers who viewed spacious image with spacious text perceive more spacious-related feelings than consumers who saw the spacious image with focused text. In other words, the congruence between image and text could influence advertisement effectiveness. Although this kind of influence is subtle, it is still in line with the previous studies (Chang & Lee, 2009).

The most valuable result is the impact of perceived spacious-related feelings from an advertisement on brand image. Prior studies have found the relation between positive feelings that consumers hold towards advertisement and consumers' evaluation on the brand (Yoo & MacInnis, 1995; Ruth, 2001). The result of this research confirmed the effects of consumers' positive feelings on brand image, which is in accordance with existing studies. What's more, the present study extends these findings by associating spacious-related feelings (commonly regarded as positive feelings) with brand trust and brand attitude. The result of this research shows perceived spacious-related feelings positively affect brand trust and brand attitude. The contributions of this finding are (a) additional evidence proving how psychological response to advertisement influence impression of the brand, and (b) giving advice for advertisement marketing. However, the current research doesn't report the impacts of consumer's focused feelings on brand image. There is a possible reason to explain this finding. In the research design, spacious-related feeling and focused-feeling were considered as two ends of one scale, while in actuality spacious-related feelings and focused-related feelings might be two relatively independent concepts, rather than opposite-meaning items in one concept. Researchers may take this into consideration in future studies.

5.2 Limitation and further research

As an experimental research, the current work has some limitations. To remind and inspire future studies, the chapter describes the shortcomings of this research.

One of the biggest limitations of current studies is the selection of experimental materials. The main purpose of the current work is to explore the influence of visual cues related to spaciousness and focus. That is to say, the visual stimulus materials must be carefully designed and displayed. However, as discussed in last chapter, an A3 size poster used as stimulus material in the main experiment, which is difficult to make participants receptive to stimuli and even cannot precisely distinguish the spaciousness and focus from advertisement, because a small poster itself might give a feeling of restraint, which affects the other feelings of consumers. A solution to this problem is to use larger and more obvious

stimulus materials, for example, a billboard. Moreover, for further research, it is also important to select appropriate stimulus materials. Although two images (with high spaciousness/focus) were chosen based on the results of pre-test, the boundary of spaciousness/ focus in images might not be obvious enough for participants to distinguish the different level of spaciousness and focus. As a result, the respondent may not perceive spaciousness/focus correctly. What can be improved here is to include more images containing various sceneries in the pre-test, and select more "extreme" images representing spaciousness/focus.

What's more, as explained in the previous section, a 'cover story' of using ice-tea was used in the main test, making participants believe they were evaluating a new ice-tea product. It re-directed consumers' attention from advertisement to the product. Hence, the result of the experiment reflected consumers' response to the product instead of their responses to the advertisement (printed poster). Hence, the effects of image and text in the advertisement were not obvious. Here, what could be done better is not to use such 'cover story' and just simply ask participants to evaluate advertisement.

Besides, the current research excluded the manipulation check for four conditions from the chapter of result due to limited data to support it. For the future studies, an elaborated question to measure manipulation check should be considered, for instance, asking participant use words to describe what they see in the poster. Furthermore, the small amount of sample size could also be a problem. Since a smaller sample size can lead to larger standard deviation, research results will be less accurate the. In this research, 80 responses were collected and used for analysis and only 20 participants for each condition. It is sufficient for research, but the result could be more accurate if more data were collected.

Lastly but most importantly, in the real world consumers' feelings and attitude could be affected by various factors, which is not easy to control. For instance, during the experiment (of tasting beverage), the mental state (e.g. relaxing, attentive) and physical condition (e.g. degree of thirsty, taste preference) of individual is distinctive, all these factors could affect participants' feelings and impression to brand. The current research made an effort to prevent the influence of external factors by including three covariates, but this might not be enough and eventually influence the result of the experiment.

5.3 Practical Implications

This research broadens our understanding of whether and how the visual stimuli influence people's perceived spaciousness and their subsequent behaviors. In psychology and interior design, there are a great number of studies exploring what impacts the environment and its ambience have on people. For instance, multiple studies have revealed that people tend to be less stressful in a nature-oriented ambience (Beukeboom, Langeveld, & Tanja-Dijkstra, 2012; Keniger et al., 2013,). Moreover, much attention has been paid to visual stimuli as well. Okken, Rompay, & Pruyn, (2013) have reported that people tend to more open in a spacious environment for it may trigger self-expression. And follow up studies (Rompay & Jol, 2016; Plambech & Konijnendijk van den Bosch, 2015) have found that subjects can perform better in creative tasks by perceiving visual stimuli with higher spaciousness. However, very few research has investigated whether this phenomenon can be found when the visual stimuli are presented in the form of print advertisement, which is valuable at the practical level since print advertisement is the mostly common marketing means in store. That's the main issue this study wanted to address.

In spite of the fact that the present work didn't confirm the hypothesized positive relationship between perceived spaciousness brought by print advertisement and people's feelings, at least it suggested a marginal interaction effect between image and text on spacious-related feeling, and this may encourage researcher to do more studies on the effects of congruence between image and text on advertisement.

Besides, the study has found the association between spacious-related feelings and brand image, which gives a new scientific insight in advertisement marketing. For merchants, the findings suggest that what consumers feel about advertisement can influence their evaluation of the brand. And marketers can strengthen brand image by providing consumers with the feelings of openness, creativity and imagination, and ultimately increase sales, which achieves the fundamental goal of marketing activities.

In summary, the present research has not found the connection between spaciousness/focus in advertisement and consumers' feelings, but providing some interesting findings, such as the effects of congruence in the advertisement on consumer' feelings and influence of consumers' feelings on brand image. It helps marketers gain a new perspective in product promotion and advertisement designing.

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7. Appendix

A. Questions used in pre-test

Please look at the picture above. To what extent do you agree the following statements?

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
a) This scene looks spacious to me.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
b) This scene looks narrow to me.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
c) This scene is attractive.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
d) This scene would make me feel open-minded.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
e) This scene would make me feel creative.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
f) This scene would make me feel inspired.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
g) This scene would make me feel focused.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
h) This scene would make me feel efficient.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc
i) This scene would make me feel organized.	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc

B. Questionnaire used in main test



What is you gender?

MaleFemale

What is your age?



After tasting the test drink, to what extent do you agree the following statement?

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
a) This drink tastes sweet							
b) This drink tastes sour	\odot	\odot	\square	\odot	\odot	\Box	\odot
c) This drink tastes bitter							
d) This drink tastes bland	\odot	\odot	\odot	\odot	\odot	\odot	\odot

Please evaluate following statements. I have the feeling that test drink would make me feel:

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
a) Open-minded							
b) Creative	\odot	\odot	\odot	\odot	\odot	\odot	\odot
c) Imaginative							
d) Inspired	\odot	\odot	\Box	\Box	\odot	\Box	\odot
e) Focused							
f) Attentive	\odot	\odot	\Box	\Box	\odot	\Box	\bigcirc
g) Efficient							
h) Goal-oriented	\odot	\odot	\odot	\odot	\odot	\odot	\odot

To what extend do you agree following statements?

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
a) I like the taste of this drink							
b) I think this drink is healthy	\odot	\Box	\odot	\Box	\Box	\Box	\odot



How do you feel the brand of test drink? Please evaluate the following statements.

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
a) I feel this brand is reliable							
b) I feel this brand is credible	\odot	\Box	\square	\Box	\Box	\odot	\Box
c) I feel this brand is convincing							
d) I feel this brand is attractive	\odot	\Box	\square	\Box	\Box	\odot	\Box
e) I feel this brand is interesting							
f) I feel this brand is appealing	\odot	\Box	\Box	\bigcirc	\Box	\odot	\Box
g) I will recommend this brand to my friends and family.							

If don't take price into your consideration, to what extent do you agree the following statement?

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
I would be willing to buy this drink when I would see it in the supermarket.							

How much would you expect to pay for this drink (500ml per bottle) in the supermarket ? Please fill in euro and cents.

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Please view the advertisement of test product again. To what extent do you agree following statement?

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
a) This advertisement is attractive							
b) This advertisement is appealing	0	\odot	Ο	\odot	\odot	\odot	\odot
c) This advertisement is interesting							
d) I feel tagline and scene in the advertisement fit to each other.		\odot		\odot	\odot	\odot	\odot

To what extent do you agree following statement?

	Completely disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Completely agree
When buying new products, I always pay attention to advertisement of the products							

To what extent do you like ice tea?									
	Extremely dislike	Moderately dislike	Slightly dislike	Neutral	Slightly like	Moderately like	Extremely like		
To what extend do you like ice tea?									

