The congruence between smell and brand image systematically influencing the consumer's reactions?

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Abstract:

Research has studied the impact of odors on consumer reactions, but little attention has been paid to olfactory congruence with product, sensory variables, consumer's gender, and even less to olfactory congruence with the brand image. The purpose of this research is to examine the effectiveness of congruence between scent and brand image in improving consumer reactions in a the store. In order to validate this research question we used an inter-subject experimental design with 1 factor and randomized (odor highly congruent "$n = 74$", odor weakly congruent "$n = 54$", and control, "$n = 75$"). The study was conducted in the store (men's ready-to-wear). The results The results show no significant effect of olfactory congruence upon purchase intent, intention to visit, visiting duration, quality of product, and quality of services.

Keywords: scent, congruence between odor and brand image, consumer reactions.

Track: Retailing & Omni-Channel Management.

1. Objectives of the Research and hypothesis

The purpose of this research is to examine the effectiveness of congruence between scent and brand image in improving consumer reactions in a the store. This research question has managerial implications for managers who wish to develop an olfactory signature congruent with their brands. It also has theoretical implications because this research complements previous research that has shown the effects of olfactory congruence with consumer's gender, product, and atmospheric variables on consumer reactions (Mitchell, Kahn, and Knasko, 1995, Mattila and Wirtz, 2001, Spangenberg, Sprott, Grohmann, and Tracy, 2006). Research has studied the effects of odors on consumer reactions, but little attention has been paid to olfactory congruence, and even less to olfactory congruence with the brand image. Therefore, we formulate the hypothesis that an odor that is congruent with the brand image may produce approach rather than avoidance reactions:

H1. The congruence of an odor with the brand image (vs. weak congruence, no odor) positively influences the purchase intent.

H2. The congruence of an odor with the brand image (vs. weak congruence, no odor) positively influences the intention to visit.

H3. The congruence of an odor with the brand image (vs. weak congruence, no odor) positively influences the visit duration.

H4. The congruence of an odor with the brand image (vs. weak congruence, no odor) positively influences the perception of the product quality.

H5. The congruence of an odor with the brand image (vs. weak congruence, no odor) positively influences the perception of the service quality.

2. Material and Method

2.1 Odor selection

In order to choice odors and to increase the internal and external validity of the study (Spangenberg et *al*., 2006), we conducted a pre-test of odors using the odors utilized by professionals in consulting company specializing in olfactory marketing of retail and physical environment. Four odors were chosen, based upon the study focus, advices from experts and researchers. These were natural essential oils or aromas controlled in terms of toxicity, evocative notes, conformity with the standards of the International Fragrance Association, and environmental and consumer protection. These odors could be perceived as highly congruent

(Rock N Roll, Luxury Scent) or weakly congruent (Rose, Raspberry powder) with the brand image. Rock N Roll and Luxury Scent are part of the Elegance assortment "woody smell created particularly for men and men's ready-to-wear stores», Rose and Raspberry powder (a fruity and floral note) are part of the Nature assortment "smell not associated with men and men's ready-to-wear stores". Rock N Roll and Luxury Scent were perceived as highly consistent with the image of the brand (located in Paris) specialized in ready-to-wear, and whose image is founded on elegance, man, fashion and ready-to-wear, Rose and Raspberry powder were perceived as weakly matching with the brand image by experts, and researchers. These odors have hedonistic qualities matched to consumers' and professionals' expectations. Participants were required to smell and judge these odors, as often as they wished, using four 10 ml glass vials and 6 cm-long blotter strips. The vials were identical and showed no distinctive signs. The odors were offered in analogous and random fashion to avoid any order bias and coded from 1 to 4.

The blotter strips were identical and replaced after each test to circumvent the contamination bias. The researcher wore no perfume to prevent the contamination bias. We used an intra-subject replication design for pre-test, organized with a matched sample ($N = 52$). The sample was unaccompanied, not told about the pre-test purpose, not allergic to odors, and differentiated (age, gender, professional categories). The pre-test face-to-face questionnaire was organized in an appropriate location; it included semantic differential and Likert-type scales deriving from the previous studies and measuring olfactory qualities (pleasing: "very unpleasant/very pleasant odor"; stimulation: "very stimulating/very relaxing odor"; familiarity: "unfamiliar/very familiar odor"; intensity: "very strong/very weak odor"; complexity: "very complex/very simple odor"; appraisal: "I like this odor" (Herrmann et *al*., 2013; Morrin and Ratneschwar, 2000; Spangenberg et *al*., 1996).

Olfactory congruence with the brand image (elegance, ready-to-wear, fashion, men) was measured using the Heckler and Childers (1992) Likert-type scale (e.g. Odor A goes well with the following ideas associated with the brand). Paired T test was used to compare the pairs of odors in terms of attributes (familiarity, appraisal, intensity, pleasing, stimulation, complexity). We chose the two odors that were significantly different in terms of congruence (highly congruent vs. weakly congruent) but similar in terms of the other characteristics (preference, familiarity, complexity). Results showed that Rock N Roll and Rose were not significantly different (*all p* > .05) in terms of familiarity (paired t RockNRollvsRose = -.717 (*df* = 47), *p* =.477), complexity (paired t RockNRollvsRose = -.068 (*df* = 48), *p* = .946), intensity (paired t

RockNRollvsRose = 1.876 (*df* = 48), *p* = .067) and preference (paired t RockNRollvs.Rose = .369 (*df* = 48), *p* = .714). These odors were viewed as almost similar in terms of these characteristics. Results show significant differences in terms of congruence with the image (elegance (paired t RockNRoll = 4.08 vs. *t* Rose = 2.46, *p* = .000), ready-to-wear (paired t RockNRoll = 4.08 *vs. t* Rose = 2.57, *p* =.000), fashion (paired t RockNRoll = 4.00 *vs. t* Rose = 2.39, *p* = .000), men (paired t RockNRoll = 4.29 *vs. t* Rose = 2.46, *p* = .000). The Rock N Roll odor had the highest mean congruence scores compared with the other odors, and the Rose odor had the weakest scores. These results showed that the two odors could be used.

2.2 Field experiment

We used an inter-subject experimental design with 1 factor and randomized (odor highly congruent "Rock N Roll, *n* = 74", odor weakly congruent "Rose, *n* = 54", and control, *n* = 75). Situational factors were neutralized by keeping them constant so as to control the confounding effect and reinforce internal validity (McDonald, 2014). The study was organized outside of particular periods. The characteristics of the sample was differentiated. To reinforce the external validity, the experiment was organized over four weeks in the store (men's ready-to-wear) located in Paris. Odors were diffused with a diffuser. Diffusion was programmed for duration and constant, average, non-aggressive intensity between 8 a.m. and 8 p.m. Diffusion was also intermittent for ventilation and cleaning purposes so as to avoid odor commingling. The measures (Table 1) come from the previous studies, and were introduced into the questionnaire. We used 7-point scale to increase the variance. The results shown that the measures were appropriate. These measures were used for the final test.

Variables	Indicators	Statistics				
		M (SD)	*Min*	*Max*	*Skewness*	*Kurtosis*
Perception of the service quality (Cronin and Taylor, 1992)	The quality of services is poor / excellent	6,2 (,796)	4	7	-,797	,163
Perception of the product quality	The quality of the products is bad / good	5,6 (,932)	3	7	-,368	,338

(Spangenberg, Crowley and Henderson, 1996)						
Visit duration	How long is your visit in this store today ?	17,12 (14,194)	2	90	2,47	7,945
Purchase intent (Rieunier, 2000)	I intend to buy at the future products in this store	5,73 (1,16)	1	7	-1,234	2,289
Intention to visit (Rieunier, 2000)	I want to come back in this store	5,85 (1,058)	2	7	-,973	1,118

Table 1. Measures

3. Results and discussion

The results of the Kruskal-Wallis test show that the experimental manipulations are successful since the mean score differences are significant ($X^2 = 11.778$; $p < .001$; AverageRank$_{highercognruence(odorRockNRoll)} = 73.60$ vs. AverageRank$_{weakcongruence(odorRose)} = 51.03$). The results of the Kruskal-Wallis Anova tests with a K sample factor show no significant effect of olfactory congruence upon purchase intent ($X^2 = 4,21$ (2) ; $p > .05$), intention to visit ($X^2 = ,569$ (2) ; $p > .05$), visiting duration ($X^2 = 1,802$ (2) ; $p > .05$), quality of product ($X^2 = 3,454$ (2) ; $p > .05$) and quality of services ($X^2 = 7\ 1,636$ (2) ; $p > .05$). The comparison of the mean ranks of the scores of the dependent variables according to the three experimental conditions shows that the reactions of the consumers are globally quasi-homogeneous in all the experimental conditions. Hence, Hypotheses H1, H2, H3, H4, H5 are rejected. The study results does not confirm the hypothesis of the positive influence of high olfactory congruence with the brand image on consumer reactions. Results does not show empirically the effectiveness of high olfactory congruence with the brand image as compared with weak congruence and no odor.

All these results suggest that in the context of this research, the olfactory congruence is insufficient to influence the aforementioned reactions. These results are consistent with some research indicating the lack of a significant effect of olfactory congruency on consumer reactions (ex: emotion, evaluation) (Mitchell, Kahn and Knasko, 1995 ; Knasko, 1995). These results diverge with the psychosocial theories: cognitive balance (Heider, 1958), and processing fluency (Reber et *al*., 2002), and environmental psychology theories (Mehrabian and Russell, 1974), and theories dealing with olfaction and atmosphere models that postulate that atmospheric stimuli, including odors, are likely to provoke specific reactions. The result diverge with studies showing the effect of olfactory congruence upon intention to visit (Spangenberg et *al*., 2006 ; Spangenberg, Grohmann and Sprott, 2005 ; Mattila and Wirtz, 2001), and visiting duration (Herrmann et *al*., 2013), and perception of products (Ludden and Schifferstein, 2009 ; Spangenberg et *al*., 2006).

4. Conclusion

The aim of the research was to analyses the influence of olfactory congruence with the brand image upon consumers. The study does not show the influence of olfactory congruence upon consumers. An important managerial implication arise from this study. It is not enough to use a congruent odor with the brand image. The study have limitations and points to research avenues. We focused upon olfactory congruence, but other olfactory attributes need to be studied, such as the attractiveness, intensity, repetition, complexity (vs. simplicity), stimulating (vs. relaxing) nature, or the evocative characteristic of odors. This research idea is all the more imperative as these characteristics may exert significant effect on consumers. It may also be worth examining the interactive effects of sensory variables of the store or the general effect of physical environment of the store on consumer reactions.

It may be interesting to investigate the mediating effect of the emotions or the cognitive variables on the relationship between odors and consumer reactions. Numerous variables and hypotheses have not been studied, such as the effect of the olfactory congruence with brand image on emotion, immersion, satisfaction, loyalty, and word-of-mouth. It may also be worth investigating the hypotheses related to the moderating effects (e.g. emotional intensity, cognition needs, olfactory preferences, culture, involvement, cognitive profile) on the relationship between olfactory congruence and consumers' reactions. Duplication of the present research could also be used in future studies. It might be important to develop the range of research to other managerial domains (e.g., brands, hotels, stores, healthcare (dental offices,

hospitals), culture (cinemas, live shows, museums), distribution (atmosphere stores, flagship stores, parking), services. It is also interesting to investigate other culture.

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