

The effect of ambient scent on consumer experience: Evidence from mobile industry

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ABSTRACT

The purpose of this experiment is to investigate the effect of the environmental scent on the sensory and physical aspects of the consumer's experience. Samples were tested in a pre-test and post-test group for two days with one week interval. At the time of the post-test, the subjects were exposed to a gardening fragrance when exposed to customer service. In this paper, an independent variable called environmental notes and six dependent variables including feelings of comfort, perception of waiting time, perceived service quality, loyalty, charming sensation, and service satisfaction were used for testing. This research is, in terms of purpose or orientation, applied and operational, descriptive and experimental. In this study, alternative assumptions about the effect of the environmental scent on feelings of comfort, perception of waiting time, loyalty and charming sensation were approved, but the effect of the environmental scent on perceived service quality of service and service satisfaction were not approved. According to the results of this research, it can be said that consumers' environmental perception had a positive impact on the sensory dimension of customer's experience in customer service, but did not affect their physical experiences.

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1. Introduction

Sensory marketing shows how the company can create brand awareness through different sensory strategies, and creates brand image in a way that relates to identity, lifestyle and customer personality. At the same time, sensory marketing suggests how the company should deal with more personalized customer affairs in order to have a relationship with customers. The path to success largely passes through feelings and emotions (Mattila & Wirtz, 2001). In this regard, different sensory expressions are associated with individuals' senses are important in facilitating the sensory experience of individuals. The sensory marketing framework is based on the idea that through sensory strategies and various sensory expressions associated with the brand and the logic of experience, companies create a mental image through the human mind's five senses in customers (Chebat & Michon, 2003). From the human senses, the sense of smelling is one of the most important senses because the sensory receptors goes straight to the limbic system associated with human emotions, emotions, health and comfort. The significance of this feeling is so much that human beings immediately reacts in the face of odor (Spangenberg et al., 1996).

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The threshold for discovery is one of the basic criteria for the level of human perception of a specific smell that determines the odor level in the air that is perceived by an individual. In front of this section, there is the threshold of odor detection, which determines the proper attribute of the odor (Michon et al., 2005; Gulas & Bloch, 1995). The significance of the detection threshold is three times the smell discovery threshold, because the odor characteristics are perceived by humans. The goal of branding is to stimulate human relationships in a strong, positive and loyal relationship with the brand, for example, in a hot summer, the perfume of an ice cream shop in your mind (Pedersen et al., 1982; Bosmans, 2006).

Therefore, the purpose of sensational branding is to focus on four main dimensions: emotional involvement, perception and reality matching, the creation of the brand platform and the improvement of brand identity (Spangenberg et al., 2004). Experiences are a set of events that people encounter during their personal lives. Therefore, it is not enough to provide customer service but it is necessary to create a satisfying experience for customer retention (Raguso & Pellmyr, 1998). Accordingly, customer experience management, which is part of the customer relationship management process, is important for companies. Customer experience management is an analysis process, event management, and personalized customer interaction with the company's service. This process has been identified by marketing researchers with five sensory, emotional, cognitive, physical and social dimensions (Morris & Ratneshwar, 2000; Morris & Ratneshwar, 2003; Morris & Chebat, 2005; Krishna et al., 2009).

People receive external stimuli or sensory inputs through five senses that provide a unique sensory quality for human perception and it can play an important role in the mindset of a brand, service or product. Marketers can use the emotional system to get emotional responses in the face of sensory stimuli (Spangenberg et al., 2006; Herrmann et al., 2013; Doucé & Janssens, 2013). Emotional responses can include emotions, emotions, mood, and human assessments of products and services. As expected to serve a collaborative experience, research has shown that more than 70% of service customers are dramatically worried about waiting times.

Although there are some exceptions, it is generally expected to be recognized as a negative experience and will lead to a negative assessment of customer service. In the marketing research, Looock (2014) investigated the sensation to improve the experience of patients with plastic surgery. More specifically, the study aimed to reduce the anxiety of patients while waiting for visits and improve patients' understanding of the waiting environment and perceived waiting time. The results of this study show that there was a remarkable effect on the aroma of lizard and music with the voice of nature in reducing the level of anxiety of patients, but if they had been used separately, the anxiety would not have reduced.

In another study, an empirical study was conducted to examine the impact of the service environment on perceiving and evaluating consumers of service experience. In this study, the effect of the element of service and environmental scent on the perception of customers from the experience of waiting for the service was studied. The results of this study showed a positive and significant effect on the comfort of the environment against the emotions of the consumer and their perception of the characteristics of the expectation and quality of service (Larson et al., 1991).

In another study, the effect of adaptation of the environmental scent was performed on the assessment of emotions in the airport environment. The research was carried out using a pre-test and post-test method. The results showed that the fresh air of the highest score was recognized as a pleasant and consistent smell of travelers by the passengers in the flight waiting room, and they had a positive view of the environment, the quality of service, the likelihood of buying as well as their own understanding of time (Yıldırım, 2016). In another study, the effect of the aroma on the supermarket environment on the behavior and assessment of buyers in the store was examined, and the results showed that in a strong scent, this fragrance had a positive impact on the evaluation of buyers, the time spent in the store and increase in sales revenue (Leenders et al., 2016).

2. The proposed study

In this paper, an independent variable called the environmental scent and six dependent variables, including feelings of comfort, perception of waiting time, perceived service quality, loyalty, charming sensation, and service satisfaction were used for testing, shown in Table 1, are used. The theoretical framework of this research seeks to prove the relationship between independent and dependent variables including two-dimensional sensory and physical in a field experiment. This research is in terms of the purpose or orientation is applied and operational, descriptive and experimental. In this research, the statistical sample includes all 150 clients of one of the customer service offices of the mobile operators. Out of 150 clients, 50 clients were selected who were looking for the receipt of their bills, microchips, and SIM cards. The reason for choosing this group of customers was because of the possibility of their reconnection in the following month, because the invoicing periods of the operator were in monthly basis. In a single-group pre-test / post-test plan, a group of individuals are measured once before the independent test and one time after the test. This scheme lacks the control group for comparison and uses the mean difference for statistical analysis.

For this purpose, dependent *t*-test is used in the related design. The conditions for its implementation are needed to analyze two sets of data, and this collection must be obtained from subjects of the same or from the two groups of matched subjects. Also, the distribution of sampling averages must be normal. Due to the fact that testing a dependent group was carried out in the form of a pre-test and a post-test, a sampling method should be used to select customers. As a result, in the pre-test, 50 clients who had been referred to their customer service for receiving one of the two billing and microphone calls were selected and to motivate them to participate in the post-test, a gift card to receive a free SIM card when they visited the office one more time was given and the SIM card was activated when they participated in the post-test. Of course, for the implementation of the post-test, 30 samples were needed, after completing 30 samples, the remaining samples did not participate in the post-test.

The purpose of this experiment was to investigate the effect of the environmental scent on the sensory and physical aspects of the customer's experience. Samples were tested in a pretest and post-test group for two days with one week interval. At the time of the post-test, the subjects were exposed to a gardening fragrance when exposed to customer service. The questionnaire prepared in this study consists of 6 questions. The questionnaire design questionnaire was based on the Likert scale of 5 options, which included scales of one to five. The questions were designed based on Larson et al. (1991) and McDonnell (2007) and Cronbach alphas calculated for all scales given in Table 1 were within desirable levels.

Table 1

Indices and variables of research

Independent variable	Number	Attribute	Dependent variables	Cronbach alpha
Environmental scent	1	Sensual	Comfort	0.730
	2	Sensual	Perception of waiting time	0.734
	3	Physical	Perceived service quality	0.652
	4	Physical	Loyalty	0.815
	5	Sensual	Charming sensation	0.851
	6	Physical	Service satisfaction	0.512

Moreover, according to Kolmogorov-Smirnov's normalization test, the assumption of the normalization of data is confirmed. Since the distribution of data is normal, paired *t* test is used for statistical analysis. Data were analyzed by SPSS software version 24, and statistical analysis was performed and the hypotheses were tested according to theoretical foundations.

Turkey's Garden Company distributes environmental perfume products along with various models of automatic spray fragrances in Iran. The aromas of this company includes the waterfall, bouquet, vanilla,

rain, ocean, nature, mountain, melon, anti-smoking, lemon and violet. In this research, the nature perfume was used. This fragrance was distributed through the office of customer service through the 300-ml-sized Gardens Auto Freshener, suitable for freshening space of about 60 square meters. Each capsule can spray 300 times in the medium. Scheduling the automatic fogging machine had three spray modes of every 8.5 minutes, 15 minutes and 30 minutes. In this research, three units in a 90-square-meter space with a spray mode of every 8.5 minutes was used and customers were exposed to a moderate scent in the post-test. Table 2 shows the hypotheses of the survey.

Table 2

The hypotheses of the survey

Hypothesis		Description	
1	Null	Customers in the situation with sprays of nature are not comfortable in the waiting queue.	$H_{0:\mu_{pre} = \mu_{post}}$
	Hypothesis	Customers in the situation with sprays of nature are comfortable in the waiting queue.	$H_{1:\mu_{pre} \neq \mu_{post}}$
2	Null	Time for customers in the situation with sprays of nature passes slowly.	$H_{0:\mu_{pre} = \mu_{post}}$
	Hypothesis	Time for customers in the situation with sprays of nature passes quickly.	$H_{1:\mu_{pre} \neq \mu_{post}}$
3	Null	Customers in the situation with sprays of nature are not pleased with the quality of the services provided.	$H_{0:\mu_{pre} = \mu_{post}}$
	Hypothesis	Customers in the situation with sprays of nature are pleased with the quality of the services provided.	$H_{1:\mu_{pre} \neq \mu_{post}}$
4	Null	Customers in the situation with sprays of nature do not prefer to visit the office one more time.	$H_{0:\mu_{pre} = \mu_{post}}$
	Hypothesis	Customers in the situation with sprays of nature prefer to visit the office one more time.	$H_{1:\mu_{pre} \neq \mu_{post}}$
5	Null	Customers in the situation with sprays of nature are having unpleasant feeling.	$H_{0:\mu_{pre} = \mu_{post}}$
	Hypothesis	Customers in the situation with sprays of nature are having pleasant feeling.	$H_{1:\mu_{pre} \neq \mu_{post}}$
6	Null	Customers in the situation with sprays of nature are not satisfied with the overall service.	$H_{0:\mu_{pre} = \mu_{post}}$
	Hypothesis	Customers in the situation with sprays of nature are satisfied with the overall service.	$H_{1:\mu_{pre} \neq \mu_{post}}$

3. The results

In this section, we present the results of testing different hypotheses of the survey.

3.1. The first hypothesis: Comfort

The first hypothesis investigated whether customers in the situation with sprays of nature were feeling comfortable or not when they were waiting in queue. Table 3 shows the results of testing the hypothesis.

Table 3

The results of testing the first hypothesis

Stage	Mean	Standard deviation	t-value	P-value	Degree of freedom
Pre-test	2.37	0.490	-8.226	0.000	29
Post-test	3.07	0.521			

According to the results of t-test, we can reject the null hypothesis when the level of significance is one percent. Therefore, we can conclude that customers were feeling comfortable in the waiting queue when they were in the situation with sprays of nature.

3.2. The second hypothesis: Feeling how time passes

The second hypothesis tried to find out whether time for customers in the situation with sprays of nature passed quickly or not when they were waiting in queue. Table 4 demonstrates the results of the survey.

Table 4

The results of testing the second hypothesis

Stage	Mean	Standard deviation	t-value	P-value	Degree of freedom
Pre-test	2.67	0.498	-10.802	0.001	29
Post-test	3.57	0.568			

According to the results of t-test in Table 4, we can reject the null hypothesis when the level of significance is one percent and we can conclude that time passed quickly for the customers who were waiting in queue to get their services under the circumstances of facing with sprays of nature.

3.3. The third hypothesis: Feeling pleased with the quality of the services

The third hypothesis attempts to learn whether customers were pleased with the quality of the services under the circumstances with sprays of nature or not and Table 5 presents the results of the survey.

Table 5

The results of testing the third hypothesis

Stage	Mean	Standard deviation	t-value	P-value	Degree of freedom
Pre-test	3.17	0.747	-0.254	0.801	29
Post-test	3.20	0.664			

According to the results of t-test in Table 5, we cannot reject the null hypothesis when the level of significance is one or even ten percent and we can conclude that the customers who were waiting in queue to get their services under the circumstances of facing with sprays of nature were not feeling good about the quality of the services they received.

3.4. The four hypothesis: Motivation to visit the office one more time

The fourth hypothesis was to discover whether or not customers who were under the situation with sprays of nature were willing to come to this office one more time. Table 6 presents the results of the survey.

Table 6

The results of testing the fourth hypothesis

Stage	Mean	Standard deviation	t-value	P-value	Degree of freedom
Pre-test	2.47	0.507	-9.898	0.001	29
Post-test	3.30	0.651			

Based on the results of t-test given in Table 6, we can reject the null hypothesis when the level of significance is one percent and we can conclude that the customers who were waiting in queue to get their services under the circumstances of facing with sprays of nature were willing to visit the office one more time.

3.5. The fifth hypothesis: *Feeling pleased when customers stay in queue*

The fifth hypothesis tries to learn whether the customers were pleased with the services under the circumstances with sprays of nature or not and Table 7 shows the results of the survey.

Table 7

The results of testing the fifth hypothesis

Stage	Mean	Standard deviation	t-value	P-value	Degree of freedom
Pre-test	2.47	0.507	-16	0.001	29
Post-test	3.53	0.507			

According to the results of t-test given in Table 7, we can reject the null hypothesis when the level of significance is one or even ten percent and conclude that the customers who were waiting in queue to get their services under the circumstances of facing with sprays of nature were pleased about the services they received.

3.6. The sixth hypothesis: *Feeling satisfied with the services*

The last hypothesis tries to learn whether customers were satisfied with the quality of the services under the circumstances with sprays of nature or not and Table 8 gives the results of our survey.

Table 8

The results of testing the sixth hypothesis

Stage	Mean	Standard deviation	t-value	P-value	Degree of freedom
Pre-test	3.03	0.669	-0.254	0.801	29
Post-test	3.07	0.583			

According to the results of t-test in Table 8, we cannot reject the null hypothesis when the level of significance is one or even ten percent. Thus we conclude that the customers who were waiting in queue to get their services under the circumstances of facing with sprays of nature were not completely satisfied about the quality of the services they received.

4. Discussion and conclusion

According to the first hypothesis, an alternative assumption is accepted, which indicates that customers are expected to be in the queue when they are waiting in the queue if there is an environmental peripheral. In this way, the environmental fragrances can make the customer feel comfortable with the services they receive and have an intuitive sense of experience. The results of this survey are consistent with the findings of Chebat and Michon (2003), Doucé and Janssens (2013) and Herrmann et al. (2013).

In accordance with the second hypothesis, the assumption of the alternative was accepted, which indicates that customers, when in the waiting queue and have a natural environmental footprint, feel that time is running fast. In this way, the environmental scent can tolerate the lost time in the waiting queue for customer service and provides a sensory experience for them. The results of this survey is somewhat consistent with the findings of Leenders et al. (2013).

According to the third hypothesis, the zero assumption was accepted, which indicates that there was no effect on the perception of the quality of services for customers when they receive the service and there was an environmental perception of nature. In this way, the environmental scent has no effect on the physical aspect of the customer's experience in this experiment. The results are in line with findings of Spangenberg (1996, 2005, 2006).

According to the fourth hypothesis, an alternative assumption was adopted that shows that when customers are receiving services and there is an environmental perception of nature, there is a likelihood that they will come back to the customer service to receive the service. In this way, the environmental smell will have an appropriate effect. In the physical dimension, there has been a customer experience in this experiment. This is in line with the findings of Yıldırım (2016).

According to the fifth hypothesis, an assumption was adopted that shows that when customers are in the waiting environment and have an environmentally-friendly nature, they feel comfortable in the company's customer service area. In this way, the environmental scent can induce a pleasant sensation to customers and has a positive impact on the sensory experience of customers.

According to the sixth hypothesis, the zero assumption was accepted, which indicates that customers are not receiving the service while the environment is surrounded by nature, which has no effect on customer satisfaction. In this way, the environmental scent has no effect on the physical aspect of the customer's experience in this experiment. According to the results of this research, it can be said that environmental perception of customers had a positive impact on the sensory dimension of customer experience in customer service, but did not affect their physical experience. The results of this study will continue to be based on the use of sound and light, and ultimately the ultimate research will be used to create a sensory experience for the brand of a mobile operator in the country.

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