

A study of the effect of BGM on the impression of shop space

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<Abstract>

This study is concerned with a correlation between the image of shop made by the collaboration of shop space and BGM, and a customer's relaxation. The environment which a customer can relax is demanded in a shop like a beauty parlor. Song selection of BGM and a space design are important for it. Then, in order to measure correlation between the image of a shop and a customer's relaxation in an experiment, the set which imitated the beauty parlor was considered. It projects the image of a beauty parlor on the screen of three directions, and also sounds music from the speaker installed in the ceiling. In the experiment, five genres of music (Classic, Jazz, Bossa Nova, Hip Hop and Rock) and four kinds of space (Fresh image, Warm image, Noisy image and Simple image) were prepared. The subjects experienced five genres of music, four kinds of space, and 20 kinds of combination at random, and the subject's impression was written down in the evaluation paper. As a result, music had influenced the customer's relaxation. At the shop which offers a relaxation to customers, music of Jazz or Bossa Nova and a warm space are effective. Simultaneously, music of a Rock and a noisy space checked that it was not effective, either. Furthermore, when making the space design of the shop the simple space, it has checked that an impression and a customer's relaxation was also changeable only by song selection of music. Finally, when designing the shop which provides a relaxation to customers, comfortable, become composed, and peace of mind are important elements.

Keyword: BGM, impression of shop space, relaxation

1. Introduction

In the so-called stressful society, the number of places providing relaxation has been increasing. In fact, the author frequents such places in order to be relaxed in my daily life. However, some of those places make people feel uncomfortable. People there often sit still while listening to music, looking around the shop, or being without thinking anything. Thus, we hypothesized that the atmosphere of the shop, made by BGM, colors and designs of their walls, and furniture, caught people's attentions and made them uncomfortable.

Recently, the relationships between relaxation and music, as well as between relaxation and space, have drawn attention as "Healing music" and "Healing space". In addition, many studies have investigated the combinations of music and spaces, and relaxation¹⁾⁻⁴⁾. However, no study focused on a space which provides relaxations, such as a beauty parlor or an esthetic salon. Furthermore, there are few studies regarding interactions between music and space: how much influence does the music or space have on relaxation. Hence in this study, we investigate the interactions between music and space, taking a beauty parlor as an example.

2. Purpose

The purpose of this study is to reveal the effects of the interactions between music and space which make an atmosphere of a shop on a customer's relaxation. Furthermore, we discuss the roles of music for interior designs of a shop providing relaxations.

3. Experiment

3.1. Experimental overview

For the purpose of creating the space imitated a beauty parlor, we presented the image of a beauty parlor on the screen which surrounds a subject in three directions, and played music from the speaker installed on the ceiling (Fig. 1). Subjects were allowed to read the magazines which we prepared through the experiment.

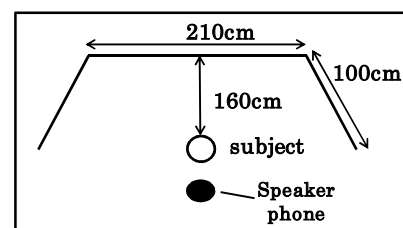


Fig.1 Experiment environment

3.2. Music and space employed in the experiment

"Canon" composed by Pachelbel, known as one of the masterpieces of classic music, has been arranged in Jazz, Bossa Nova, Hip Hop, and Rock. These 5 versions were employed in this experiment under the condition that all the tracks must be derived from the same original, in order to facilitate the comparison of many genres of music. "Classic" (tempo=70 to 85) was an orchestral slow music, "Jazz" (tempo=90) was a quiet music played with a piano, a bass guitar, and drums. "Bossa Nova" (tempo=96) was a slow music with a Latin rhythm, played with a piano and a guitar. "Hip Hop" (tempo=90) was an accessible music, and

the only track having lyrics of the 4 tracks. “Rock” (tempo=190) was a noisy music with deep bass sounds and sounds of guitars.

With regard to the space, we prepared 4 kinds of spaces based on the official textbook for the test in color coordination published by Ministry of Education, Culture, Sports, Science and Technology in Japan: “Fresh = F” which was based on cool colors and had a bright and flesh image, “Warm = W” which was based on warm colors and had a deep and warm image, “Noisy = N” which was a decorated vivid color and had a showy and gaudy image, and “Simple = S” which was black-and-white without any decoration and had a chic and mature image⁵⁾.

3.3. Experiment 1

First, in order to evaluate the impressions of the music, subjects were exposed to the music alone in a dark room for 3 minutes. After that, the subjects were asked to fill out the evaluation paper with their impressions of the music. The evaluation paper consisted of the pairs of adjectives: 2 items representing atmospheres of the space, 11 items representing relaxation, and 4 items representing subject’s preference. Each pair of adjectives was rated on a 5-point scale. Second, in order to measure the impressions of the space, the subjects were exposed to the space alone in a silent situation for 10 minutes after 1 minute of the start of the experiment. Then, they were asked to fill out the evaluation paper with their impressions of the space. Finally, the subjects were exposed to a total of 20 combinations of the music and space (5 genres of music × 4 kinds of spaces), in a way that the music was changed in ten minutes intervals while the space stayed unchanged. Then, they were asked to fill out the evaluation paper with their impressions. Each condition was also presented for 10 minutes after 1 minute of the start of the experiment in random order. The subjects were 8 males and 7 females whose average age was 21.7 years old.

3.4. Experiment 2

Contrary to Experiment 1, we changed the space in ten minutes intervals while keeping the music unchanged as the way to present the combinations of the music and space. The other conditions were same as that of Experiment 1. The subjects were 3 males and 2 females whose average age was 22 years old.

4. Results and discussions

4.1. Experiment 1

First, in order to investigate the degree of relaxation of each combination, we made a graph based on the average values of the item of relaxation in the evaluation paper.

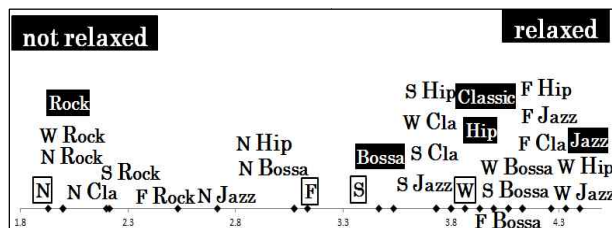


Fig.2 The degree of a relaxed

Fig. 2 shows that the degrees of relaxation are high in the combinations with “Fresh”, “Warm”, and “Simple”, and low in the combinations with “Noisy”. In addition, the degrees of relaxation are low in all the combinations with “Rock”.

Fig. 3 is a scatter plot based on the average values of the items of impressions based in the evaluation paper for the purpose of examining the degrees of impressions of “Warm - Fresh” and “Noisy - Simple”. The result shows that the combinations with the space designed in the image of “Fresh” had fresh impressions as expected, and each of the other 3 kinds of spaces had impressions similar to their own intended images. Furthermore, it was also revealed that there were the combinations whose impressions were drawn to the music and a group of the combinations whose impressions were drawn to the space.

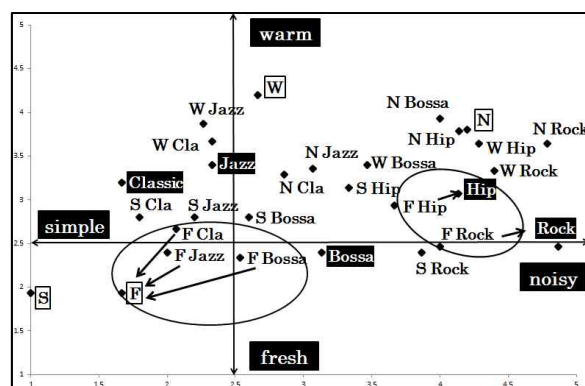


Fig.3 The degree of an impression

Therefore, we analyzed how much they were drawn. The calculation method was as follows. First, the average values of the scores for relaxation were plotted as coordinates, and then the coordinates of the music, the space, and the combination of music and space were connected with straight lines. Next, a perpendicular from the combination of music and space to the straight line connecting the music and the space was drawn to find the intersection of these two lines. A distance from the space and the intersection was defined as X, and a distance from the space and the music was defined as Y. A proportion of X to Y, represented as X/Y, was calculated. The nearer 0 the proportion is, the more influenced the combination is

by space, and the nearer 1, the more influenced by music.

Table1 Relationship of music and space

	Classic	Jazz	HipHop	Bossa	Rock
F	0.59	0.38	0.83	0.65	0.74
W	0.45	0.55	0.79	0.52	0.73
N	0.56	0.67	0.29	0.12	0.23
S	0.72	0.65	0.77	0.84	0.74

As seen in Table 1, the values except for the combinations with the noisy space are mostly close to 1. This means that the degrees of relaxation of the combinations were greatly influenced by music. Also, the combinations with “Noisy” were more influenced by space. Furthermore, because the values of the simple space were particularly high, it is suggested that an impression and a degree of relaxation of a shop can be changed by changing music if its interior decors were designed simple.

Next, we conducted a principal component analysis based on the average values of the scores of the items representing relaxation in the evaluation paper. The first principal component whose contribution rate exceeded 10 % was defined as “relax – non relax”, and the second principal component was defined as “friendly – quite”.

Fig. 4 is a graph on which the principal component scores of the music, space, and combinations are plotted. The arrow in the Fig. 4 is the movements in an order of “F Classic→S Classic →W Classic→N Classic. When compared between the music, none of the arrows have the same directionality. This means that the degree of relaxation was not influenced by space.

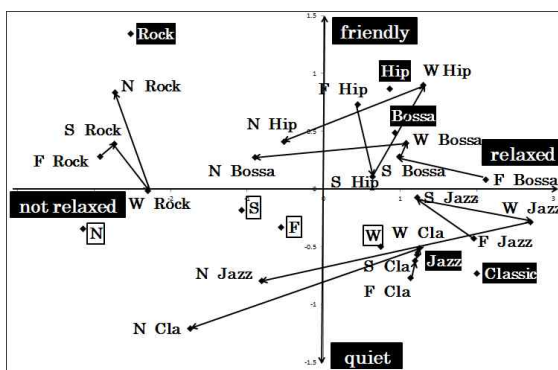


Fig.4 Variation of each conditions by music

Fig.5 shows the movements of the arrows in an order of “F Classic→F Jazz→F Bossa→F Hip Hop→F Rock”. In comparison between the spaces, all of the arrows have a tendency to point the same direction. This result shows that the decision of the degree of relaxation was influenced by music. From the above

results, after all, we would say that a degree of relaxation is more influenced by music than space. Moreover, it was found that the atmosphere of a shop could be produced: playing “Jazz” or “Bossa Nova” could make it peaceful, “Hip Hop” could make it friendly, and “Classic” could make it laid-back.

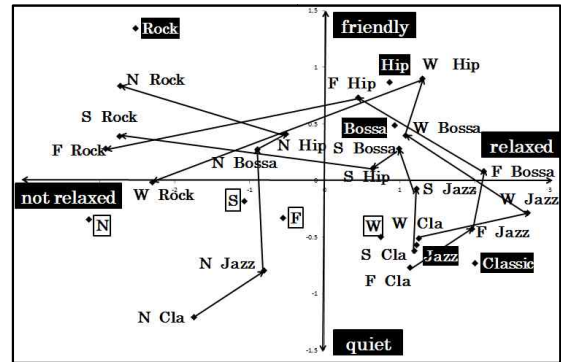


Fig.5 Variation of each conditions by space

Next, we performed a multiple regression analysis in order to examine which factors have significant influences on relaxation. Table 2 shows the result of the analysis in which the 10 items regarding relaxation in the evaluation paper were defined as explanatory variables, and the item representing being relaxed or not was defined as an objective variable. We believe that this result is reliable because the multiple correlation coefficient was 0.86. In Table2, the items whose partial regression coefficient exceeds 0.1 are “comfortable”, “become composed”, and “peace of mind”. The higher the scores of these 3 items were, the higher the evaluation of relaxation was. Consequently, it is important to consider these 3 factors for designing interior decors of a shop.

Table2 A relaxed component

variable name	partial regression coefficient	
easy	0.02	
harmonious	0.05	
calm	0.01	
comfortable	0.13	*
become composed	0.38	**
soft mild	0.04	
at easy	0.09	
friendly	0.04	
open up to	0.08	
peace of mind	0.19	**

4.2. Experiment 2

As a result of the presentment in which the space was changed in ten minutes intervals while the music stayed unchanged, the degrees of relaxation and impression were much the same as those of Experiment 1. This shows that music has a major influence on the degree of relaxation even if the

presentation is changed. Furthermore, since the result of a multiple regression analysis was the same as that of Experiment 1, it was revealed that the items of “comfortable”, “become composed”, and “peace of mind” were regarded as important to feel relaxed regardless of the presentment.

Fig. 6 and Fig. 7 are, as with Experiment 1, graphs which compare the result of a principal component analysis by music and space, respectively. All of the arrows drawn according to genres of music in Fig. 6 had the same tendency in their directions. This means that the spaces had influences on the decision of the degree of relaxation unlike Experiment 1. However, because all of the arrows drawn according to space in Fig. 7 also have the same tendency, music also had influences on the degree of relaxation. Therefore, it was revealed that both of music and space had influences on the degree of relaxation when the different spaces were presented one after another while the music stayed unchanged.

Since the degree of relaxation was strongly influenced by the changed music rather than the fixed space in the result of Experiment 1, it was expected that the degree of relaxation would be strongly influenced by the changed space in Experiment 2. However, music affected the degree of relaxation in Experiment 2 as well. Thus, we believe that music still has a much greater impact on a decision of a degree of relaxation.

5. Conclusion

The results showed that music had a great influence on a degree of relaxation. Moreover, it was also revealed that an atmosphere of a shop was produced by genres of music. Places which provide relaxations to customers such as a beauty parlor simulated in this study may become more relaxing by avoiding a “Noisy” space and noisy music such as “Rock”, and instead playing slow and quiet music such as “Jazz” and “Bossa Nova” in a “Warm” space. Furthermore, it was found that an atmosphere and a degree of relaxation of a shop could be changed only by changing music if the inside of the shop had been designed to be “Simple”. If an image and a degree of relaxation of a shop can be changed only by music, cost reduction effects are expected: costs to change interior decors can be reduced. In addition, it is also important to make people feel the 3 factors: comfortable, become composed, and peace of mind, for designing interiors of a store providing relaxations.

To summarize the above, since the factor of music plays a very important role for an image of a space, it is necessary to select music based on the atmosphere at which the shop aims, not just playing favorite music. However, this study is a laboratory-based, simulated experiment using screen images, and targets people in their 20s. The author believes that further new knowledge will be obtained if the results in this study are applied to actual shop situations for analyzing diverse age groups.

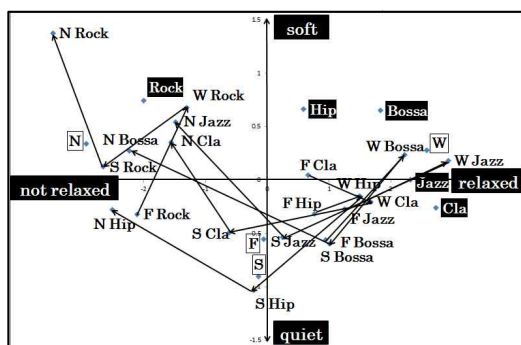


Fig.6 Variation of each conditions by music

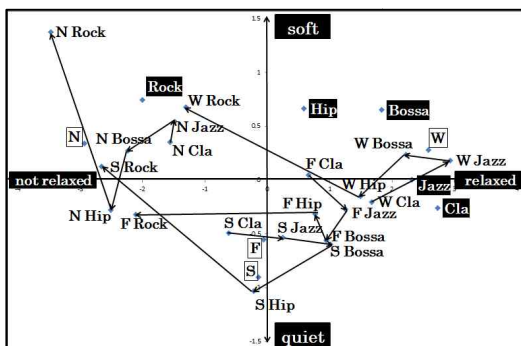


Fig.7 Variation of each conditions by space

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