The relationship between preferences in pink colors and fashion taste

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Abstract: Kawaii is a Japanese cultural uniqueness that attracts attention around the world. In this study, we focused on pink as a typical kawaii color. Four pink colors were selected and used in our questionnaire to collect data about most kawaii and most favorite pink colors as well as the behavior in using pink products including clothing and makeup. From the questionnaire results, we obtained the relationship between the most kawaii and/or the most favorite pink, and behavior in using pink products. Furthermore, we interpreted how fashion trend influenced to the results. Finally, we obtained tendencies of the pink colors for the most kawaii and the most favorite as well as their relationship with fashion trend, which should be useful for fashion product designs.

Keywords: Kawaii, Fashion, Pink, Color

1. INTRODUCTION

Kawaii is a Japanese cultural uniqueness that attracts attention around the world. It has been considered as an important value that increases impressions on various products such as Hello Kitty by Sanrio. From our systematic studies on kawaii products, various attributes have been proposed including color [1]. In addition, since 2017, we have conducted our research on fashion and investigate the transition of kawaii fashion trends in Japan [2-5].

Based on our previous studies, we proceeded to our current study since 2019 focusing on pink, as pink is a typical color representative of kawaii product designs [6-7]. Kiyosawa [7] conducted a quantitative survey and suggested that baby pink, pink, and coral pink are the colors considered as kawaii. In particular, baby pink, which is brighter and softer than the others, is the most kawaii. In addition, it is commonly seen that different shades of pink are important features in fashion design, for example, a bright-toned pink with a little amount of purple was proposed as trend color in spring/summer of 2020 [8]. Because of the importance of pink colors in kawaii fashion, it is useful to quantitatively clarify the relationship between preferences in pink (as the most kawaii and the most favorite colors) and behavior of using pink products. The results deepen understanding in fashion trend in Japan.

2. METHOD

We conducted an online questionnaire about pink color which consists of 5 items (Table 1). The first three questions asked participants to rate on 5-point Likert scale whether they like pink color (Q1) and their behaviors in using pink items for clothing items (Q2) and pink makeup (Q3). The other two questions asked participants to select the most kawaii (Q4) and the most favorite (Q5) pink colors from given choices of four pink colors and “None.”

The four choices of pink colors in Q4 and Q5 were selected based on Kiyosawa’s [7] and other previous studies [9]. The color details (Table 2) were derived from the PCCS color tabulation software (Japan Color Enterprise Co., Ltd.).

Table 1: Questionnaire items

| Item | Question | Choices |
|------|----------|---------|
| Q1   | Do you like pink color? | 5-point Likert scale |
| Q2   | Do you have many pink items (limited to clothing)? | 5-point Likert scale |
| Q3   | Do you like to wear makeup that contains pink color? | 1=Strongly disagree |
| Q4   | Which pink color is the most kawaii? | 1: Purple, 4: None |
| Q5   | Which pink color is your favorite? | 2: Pink, 5: None |

Table 2: Color details from PCCS hue-tone color space

| Item | Question | Choices |
|------|----------|---------|
| Q1   | Do you like pink color? | 5-point Likert scale |
| Q2   | Do you have many pink items (limited to clothing)? | 5-point Likert scale |
| Q3   | Do you like to wear makeup that contains pink color? | 1=Strongly disagree |
| Q4   | Which pink color is the most kawaii? | 1: Purple, 4: None |
| Q5   | Which pink color is your favorite? | 2: Pink, 5: None |
3. RESULTS

3.1 Participants

We recruited 239 participants to answer the questionnaire. All of them are the 1st to 4th year students of the Department of Textile and Clothing, Kyoritsu Women’s University, who have a basic knowledge about clothing studies and are interested in fashion.

Since the questionnaire was conducted on two days, the answers from some participants were missing. As a result, a total number of participants who answered the questionnaire on both days is 159. We then used their questionnaire data for further analysis.

3.2 Questionnaire results

For Q1 to Q3, we performed Friedman test to determine difference of scores among them. The result shows that there is a significant difference of scores among these 3 questions (p<0.01). We further performed post-hoc analysis between pairs of the three questions using Wilcoxon signed-rank tests with a Bonferroni-adjusted significance level of p<0.017. The result shows that there are significant differences between all pairs among the three questions (p<0.017), indicating Q1 > Q3 > Q2 (Figure 1).

For Q4 and Q5, we counted the number of participants who selected each choice. As the results, the number of participants for “purplish pink” is the highest in Q4 indicating the most kawai pink color (Figure 2), while that of “strong purplish pink” is the highest in Q5 indicating the most favorite pink color (Figure 3). For both questions, “pale pink” was the least selected among them.

3.3 Comparison of questionnaire results between the most kawaii and the most favorite pink colors

We further analyzed the questionnaire results by comparing matched and mismatched selections between the most kawaii (Q4) and the most favorite (Q5) pink colors. A distribution of number of participants for all combinations of Q4 and Q5 selections is shown in Figure 4. Out of 159 participants, the selections of 86 participants (54%) are matched, and those of 73 participants are mismatched (46%). (Note that “None” is discarded from further analysis because the numbers of participants are low.)

Furthermore, we analyzed the average scores of Q1 to Q3 for each pink color dividing into 3 classes: (a) matched selections, (b) mismatched selections grouped by Q4, and (c) mismatched selections grouped by Q5, as shown in Figure 5(a-c) respectively.

For each of Q1 to Q3 of each class, we performed Kruskal-Wallis H tests to determine differences of scores among selections of Q4 or Q5. The results show that there are significant differences in scores among matched selections of Q4/Q5 for Q1 (p<0.01), Q2 (p<0.01), and Q3 (p<0.05) (Figure 5(a)). However, there are no significant differences in scores among mismatched selections of Q4 (Figure 5(b)) or Q5 (Figure 5(c)).

Since there are significant differences in Q1 to Q3 scores for matched selections, we further performed post-hoc analysis between pairs of pink colors for each of Q1 to Q3 using Mann-Whitney U tests with a Bonferroni-adjusted significance level of p<0.01. The results show that there are significant differences between some pairs (Figure 5(a)), indicating that the scores for “strong pink” are significantly lower than the other three pink colors for Q1 and Q2, and lower than “pale pink” for Q3.
The results are between group Q4, an (Comparing between (a) and (b)) denotes p<0.10, * denotes p<0.05, and ** denotes p<0.002. (Table 3).

Figure 5: Average scores of Q1, Q2, and Q3 dividing into 3 classes: (a) matched selections, (b) mismatched selections grouped by Q4, and (c) mismatched selections grouped by Q5.

Table 3: Differences of average scores of each pink color between “(a) and (b)” as well as “(a) and (c)” (See Figure 5’s caption for description of (a), (b), and (c)).

| Comparison pair | Item | Pale pink | Purplish pink | Strong purplish pink | Strong pink |
|-----------------|------|-----------|---------------|---------------------|-------------|
| (a) - (b)       | Q1   | 0.52      | 0.12          | 0.29                | ** -1.20    |
|                 | Q2   | 0.97      | 0.42          | * 1.03              | ** -1.39    |
|                 | Q3   | 0.32      | 0.08          | 0.35                | -0.60       |
| (a) - (c)       | Q1   | 0.24      | 0.19          | -0.11               | -0.43       |
|                 | Q2   | 0.37      | 0.27          | 0.38                | -0.14       |
|                 | Q3   | 0.14      | 0.01          | 0.26                | 0.03        |

Note: † denotes p<0.10, * denotes p<0.05, and ** denotes p<0.001.

In addition, we performed the Mann-Whitney U tests to compare differences of the scores of each pink color between “(a) and (b)” as well as “(a) and (c)” (Table 3). The results are as follows:

A. Comparing between (a) and (c) classes for each of the four pink colors, there are no differences in the scores of Q1, Q2, and Q3. (See results of pair (a)-(c) in Table 3).

B. Comparing between (a) and (b),

i. Those who selected “strong purplish pink” or “pale pink” in Q4 but the other choices in Q5 have significant lower scores in Q2 than those who selected those choices for both Q4 and Q5. (See “Pale pink” and “Strong purplish pink” results of pair (a)-(b) in Table 3).

ii. Those who selected “strong pink” in Q4 but the other choices in Q5 have significant higher scores in Q1 and Q2 than those who selected “strong pink” for both Q4 and Q5. (See “Strong pink” result of pair (a)-(b) in Table 3).

4. DISCUSSION

The result that around half of the participants have different selections between “the most kawaii” and “favorite” pink colors (Figure 4) suggests that the most kawaii” and the most favorite pink colors do not need to be consistent, which was also reported in the previous study [7].

Next, we discuss about each pink color as follows:

- **Strong purplish pink:** As described in our report [10], this is a pink color that we employed based on a proposal of trend color in spring/summer of 2020 [8], which was not presented in Kiyosawa’s study [7]. The result of Figure 3 shows that it is selected most as the most favorite color, which is presumable due to the influence of the fact that it is a trend color. On the contrary, our result described in Section 3.3.B.i shows that those who selected strong purplish pink as the most kawaii but not as favorite tend not to like pink color and not to have many pink clothing. This result can be interpreted that the color was judged as most kawaii only by an impression at a glance because it is seen more common in the fashion market as a trend color. In such case, it is understandable that the “strong purplish pink” selectors in Q4 tend not to like pink color and not to have many pink clothing.

- **Purplish pink:** It was selected as the most kawaii color (Figure 2), while in the previous study [7], the colors similar to “purplish pink” were selected as favorites. This result shows certain relationship between most kawaii and most favorite that might be influenced by the colors that female students are familiar with since their young ages, for example, various kawaii products by Sanrio that have similar pink colors to “purplish pink.” However, further study is necessary to examine pink colors that are used in products of certain market such as children’s clothing, accessories, and stationery.

- **Pale pink:** It was the least selected as the most kawaii and most favorite (Figure 3). However, the participants who selected “pale pink” as and the most favorite gave high scores for liking pink color (Q1), having pink clothing items (Q2), and wearing pink makeup (Q3) (Section 3.3.A). These results are considered reasonable because “pale pink” is a favorite pink in
Kiyosawa’s study [7], and it is a standard color of pink which is typically used in clothing, makeup products, and miscellaneous goods.

**Strong pink:** The participants who selected “strong pink” as the most kawaii and most favorite gave low scores for Q1, Q2, and Q3 (Section 3.3.A). However, those who selected “strong pink” as the most kawaii but not as most favorite tend to like pink color and have many pink clothing items (Section 3.3.B.ii). Some of our results contradict to the previous study [7] in which “strong pink” was the most kawaii and most favorite. However, since the previous study was conducted eight years ago (2012), there is possibility that social situation and cultural background have been changed. New trends have been proposing along with changes of product development over time, especially the colors used in fashion and makeup products that are influenced by annual trends. Differences of the results may suggest a change in the interpretation of this pink color based on the current fashion trend.

The results of this study reveal certain tendencies toward the impression on pink colors as most kawaii and most favorite. The results give us some clues to deepen the understanding about an ongoing situation of fashion trends. In addition, the results reveal a certain position as both kawaii and favorite for “strong purplish pink,” which is newly proposed as trend color, confirming its potential as one important feature for fashion product designs.

5. CONCLUSION

This article introduces our study on pink as well as its trend from a fashion aspect. Using four pink colors, we conducted questionnaires about kawaii, favorite, preference in pink, and behavior in using pink clothing items and makeup.

As the results, we obtained tendencies of the four pink colors in relation to the most kawaii and the most favorite. In addition, our result shows a certain position of “strong purplish pink,” indicating that this trend color has potential to be one important feature for fashion product designs.

Since there are few studies that employ quantitative approach in fashion research field, our results are distinguished to contribute this field. We will continue to conduct more detailed study.

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