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EFFECT OF WAISTLINE POSITION OF CLOTHING ON PERCEIVED ATTRACTIVENESS

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ABSTRACT

We investigated the effects of the relationship between the waistline of clothing and the body on the appearance of clothing using a sensory test with Japanese and British participants. Using a three-dimensional clothing simulator, an avatar and five dresses with different clothing waistline (CWL) parameters were created. Evaluation by Japanese participants revealed that a dress for which the CWL position fit the body waistline (BWL) of the wearer was evaluated as being unwrinkled, while the dress with a higher CWL position was evaluated as constricted, slim, and beautiful. However, British participants evaluated dresses for which the CWL position fit the wearer's BWL and the CWL was 1 cm higher than the wearer's BWL; these dresses were evaluated as slim, and having a beautiful silhouette. Therefore, the results suggested that there is a specific type of waistline for clothing that is perceived as the most attractive, and this differs between Japanese and British participants. When designing a dress, it is necessary to identify the most suitable position of the waistline to maximize attractiveness, taking into account the consumers' Kansei in each country.

Keywords: Clothing appearance, Sensory test, Waistline, Three-dimensional clothing, Japanese and British

INTRODUCTION

Attractiveness of appearance is typically considered to be an important factor in clothing choice. Clothing enables a person to modify the external appearance of their body [1]. When purchasing ready-to-wear clothing, consumers typically choose and purchase clothing that is similar to their body size. However, similarity to a person's body size does not necessarily mean that clothing will have an

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attractive appearance. Because ready-made clothes are not specified for the individual wearer, clothing companies attempt to produce articles of clothing that can fit as many people as possible while appearing attractive.

Several previous studies have investigated methods for making clothing to fit individual body sizes [2, 3]. It is crucial to make clothing that looks attractive by modifying the wearer's appearance although it is important to make clothing to be fitted the wearer's body size and shape [4]. Eckman [5] discussed the importance of silhouettes on the evaluation of the attractiveness of men's tailored clothing. LaBat and DeLong [6] investigated the relationship between body cathexis and satisfaction on the fit of apparel. The evaluations of clothing appearance have been reported to differ between people in different countries, and clarifying its differences between countries have provided valuable information to inform the production of clothing preferred in each country [7, 8]. Kim et al [9] investigated the effect of the bustline to the upper garment with various body types by examining the appearance of wearers, and they found the existence of an appropriate balance between the bustline and the waistline. However, it is still necessary to investigate the effect of the waist and hip lines on clothing appearance.

In this study, we investigated the effects of the clothing waistline to its appearance onto the body using a sensory test. Also, the comparison of the evaluation results by Japanese and British participants was conducted.

2. EXPERIMENT

We investigated the effects of the different clothing waistline (CWL) positions to the wearer's appearance evaluation. An experimental avatar and five dresses with different CWLs were created using a three-dimensional clothing simulator (CLO Enterprise, Yuka & Alpha Co., Ltd.).

The avatar was created based on a dummy's dimensions, representing the average body size of a Japanese woman in her twenties (height: 158 cm, bust: 82 cm, waist: 63.5 cm, and hip: 89 cm) [10]. The avatar's body waistline (BWL) and CWL were 98 cm and 95.6 cm respectively which both represent the body waistline position by the height from the ground, but this study used CWL as a reference position [11]. Next, an H-line one-piece dress fitted the experimental avatar was developed. As shown in Figure 1, we developed the four different dresses adjusted by the position of CWL moving the reference position up and down by 1 cm to 2 cm. Each dress was named CWL standard, CWL1 up, CWL2 up, CWL1 down, and CWL2 down, and these were applied onto the avatar.

The appearance evaluations were conducted by examining simulated images of avatars wearing different dresses. The images of the five avatars wearing different position of waistline were randomly presented to each participant. Sensory evaluation was performed using a ranking method. The evaluation items were "less wrinkled", "well fitted", "legs look long", "waist looks constricted", "looks slim", "looks beautiful", and "silhouette looks beautiful". These items are referred to as "wrinkle", "fit", "legs look long", "waist constricted", "slim", "beautiful", and "beautiful silhouette" for analysis. Kendall's coefficient of consistency W and Friedman's test were performed to examine the consistency of participants' judgment and independence between samples. The participants were 20 Japanese college students in their 20s (10 male and 10 female) and 10 British (10 female) teaching fashion at the British university, aged between their 30s and 50s.

(a) CWL2 down (b) CWL1 down (c) CWL standard (d) CWL1 up (e) CWL2 up

Figure 1: Clothing simulation based on BWL

RESULTS AND DISCUSSION

Figure 2 shows the average of the ranking of the appearance evaluation from the front by Japanese participants which lower values reflect higher ratings. By Kendall's coefficient of consistency W and Friedman's test, all items were ranked with agreement among Japanese participants in their evaluation results. Overall, Japanese participants' rankings were increased following the position of the CWL increased, although items with low and high CWL were evaluated with having wrinkles. A garment with a high CWL position was evaluated as constricted, slim and beautiful. Therefore, it was found that Japanese participants preferred a higher waistline than that of the average woman's actual body.

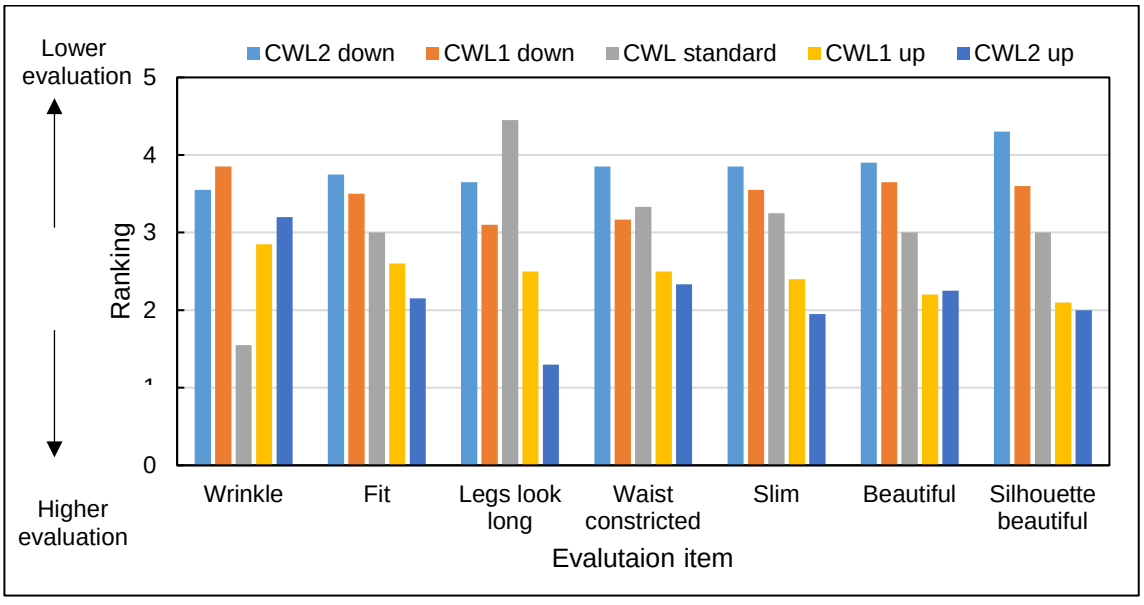

Figure 2: Averaged rankings by Japanese participants

Figure 3 shows the average rankings of appearance evaluation by British participants. Only three items (legs look long, slim, beautiful silhouette) were ranked with the agreement, and CLW standard and CLW1 up as slim and having a beautiful silhouette.

Comparison of the results between Japanese and British participants revealed differences in the evaluation of clothing appearance. Japanese participants showed a preference for the higher CWL, whereas British participants preferred the CWL to fit the BWL. Therefore, it is suggested to consider the CWL according to the preferences of each country to produce attractive clothing for different markets.

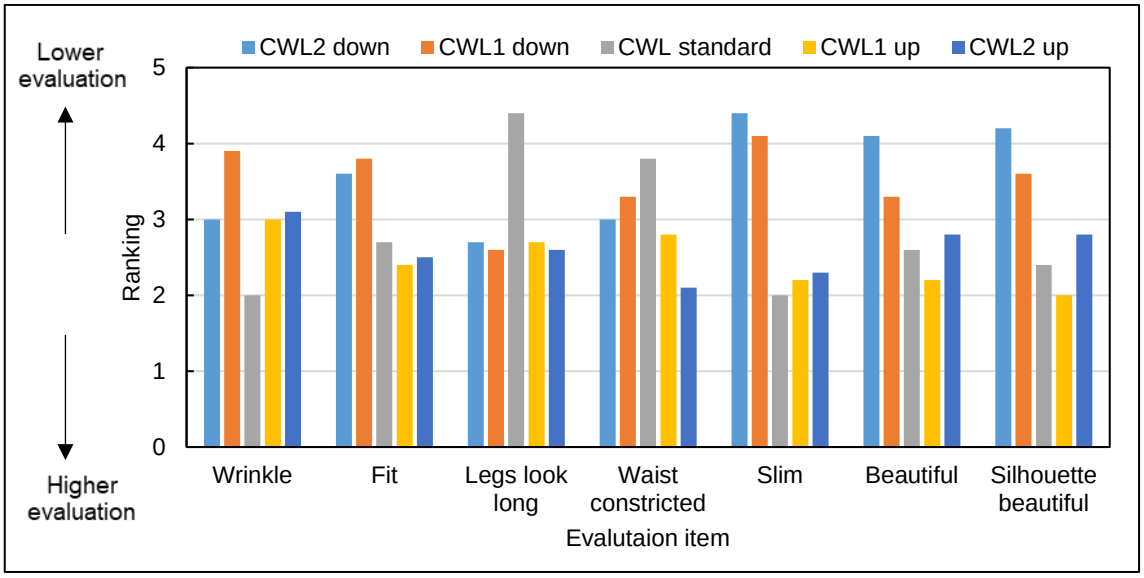

Figure 3: Averaged rankings by British participants

CONCLUSION

The study was expolored how different clothing waistline position affected the evaluation of the wearer's appearance. In the evaluation by Japanese participants, a dress in which the CWL position fit the wearer's BWL was evaluated as being unwrinkled, but the dress with a higher CWL position was evaluated as being constricted, slim, and beautiful. However, British participants evaluated dresses for which the CWL position fit the wearer's BWL, but the CWL was 1 cm above the wearer's BWL as slim and having a beautiful silhouette. Therefore, the results are found that there is an optimum waistline for clothing perceived to be attractive, and this differs between Japanese and British participants. It is important to c ider a suitable waistline position to maximize attractiveness when designing a dress taking into account the consumers' Kansei in each country.

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