Study on Fashion Tastes of Japanese Women in Their 20s and Analysis Methods

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Abstract: In this study, we suggest a new method to analyze the fashion taste of consumers using statistical analysis. Approximately 250 women in their twenties were surveyed about clothes, makeup and the fashion magazines they read. At first 25 clothing items were extracted from a fashion magazine and the subjects evaluated their impressions of them. The evaluation points were taken for cluster analysis and the 25 clothing items were divided into four clusters. Four kinds of makeup types were prepared, and the subject chose their favorite makeup type and clothes. The chosen pairs were then analyzed carefully for any correlations. The results showed that the taste in clothes had close relationship to makeup. Furthermore, we are analyzing the fashion magazines that the subjects read to identify connections with their current fashion taste.

Key words: Fashion, Fashion Tastes, Clothing, Makeup, Women, Analysis Methods

1. Introduction

In addition to key factors such as price, functionality, and performance, people involved in product development these days are required to take into account the preferences of target consumers of their products. However, reflecting consumer preferences in products is no easy task. Even if products are created in accordance with market survey findings, it often happens that the ideas of the planners and designers of such products diverge from actual consumer preferences. In order to develop products that satisfy consumers, it is thus necessary to make an accurate analysis of what consumers want.

This research is intended to suggest preference analysis techniques by taking note of the fashion preferences of women in their twenties. For this purpose, surveys and analysis were conducted by combining different types of clothing and makeup.

2. Methodology

In order to investigate and analyze fashion preferences concerning clothing and makeup, it was decided that the following two steps would be conducted. First, research was done to classify fashion (clothing) preferences, and then to analyze how clothing and makeup are related to each other. The research was conducted from Aug. 2012 to Nov. 2012.

2-1 Research to classify fashion (clothing) preferences

A total of 25 fashion (clothing) images were chosen for evaluation from five fashion magazines targeted at women in their 20s. A total of 11 terms were then selected to evaluate those images: "casual," "natural," "simple," "unique," "girly," "sharp," "informal," "mature (adult)," "soft," "cool," and "neat." These terms were chosen by picking out 125 candidate terms from the language image scale developed jointly by women's magazines and Nippon Color & Design Research Institute Inc., which were then narrowed down to 25 terms through brainstorming sessions.

The subjects in this research were 30 female university students, who were asked to use these terms to evaluate each image on a 0 - 5 scale. The mean grades of fashion style images were then subjected to factor analysis, which generated three factors (Fig. 1). Based on factor loading, Factor 1 was termed "lightheartedness," Factor 2 was termed "girlishness," and Factor 3 was termed "simplicity."



Fig.1 Factor analysis results

Factor scores were then used to conduct cluster analysis, which classified the factors into four clusters. Below are keywords for each cluster identified based on their respective factor scores.

Clothing 1: Girlish, soft

Clothing 2: Cool, mature

Clothing 3: Neat, simple

Clothing 4: Unique, girly



Fig.2 Fashion style (clothing) classification

Likewise, makeup was classified as follows in a brainstorming session where subjects referenced magazines and web sites aimed at female college students. Makeup 1: Soft feel, accentuating the eyes, rounding the cheeks, sweetness Makeup 2: Clear, emphasis on foundation, not overdone, pure Makeup 3: Elegant, long-slitted eyes, modulated, lustrous

Makeup 4: Well-defined eyes / features, drooping eyes, solid, uneven

Makeup1

Soft feel, Accentuating the eyes Rounding the cheeks Sweetness



Makeup3

Elegant, L ong-slitted eyes Modulated Lustrous



Clear, Emphasis on foundation Not overdone Pure

Makeup4

Makeup2

Well-defined eyes / features, Drooping eyes, Solid, Uneven



Fig. 3 Classification of makeup

2-2 Research and analysis of fashion (clothing) and makeup preferences

Based on the results of 2-1 above, the preferences of fashion (clothing) and makeup combined were investigated for 247 female college students, who were asked to rank the four classifications of clothing and makeup according to their liking. A cross-tabulation table was then prepared and subjected to Fisher's exact probability test and correspondence analysis in order to study their relationship.

3. Results

Fisher's exact probability test for the cross-tabulation data (Table 1) found a significant difference (p < 0.05), indicating that clothing and makeup are interrelated. Also shown in Figure 4 are the findings of correspondence analysis, which is a technique that allows one to visually understand how each element relates to one another for cross-tabulated data. Specifically, elements that have strong relationships are plotted near each other. This leads to the conclusion that for each piece of clothing to be plotted there is a type of makeup that is strongly related to it. For example, note on Makeup 2 in the table 1, Makeup 2 showed some relationship to Clothing 2. But focus on

Clothing 2, it has a stronger relationship to Makeup 3 than Makeup 2. Therefore, Clothing 2 are plotted near Makeup 3 in Figure 4. Described below are some of the concrete relationships.

Soft makeup 1 corresponds most closely to the cute cluster of Clothing 1.

Elegant Makeup 3 corresponds most closely to the cool cluster of Clothing 2.

Clear Makeup 2 corresponds most closely to the neat cluster of Clothing 3.

Well-defined feature Makeup 4 corresponds most closely to the unique cluster of Clothing 4.

For correspondence analysis, the positional relationships of different items were judged based on their direction from the origin. A similar meaning may be derived from those that lie in the same direction from the origin. Here, using clusters of each clothing type and makeup features, the positive direction on the x-axis can be termed "cute" and the negative direction can be termed "cool." The positive direction on the y-axis can be termed "unique" and the negative direction can be termed "natural."

	Makeup1	Makeup2	Makeup3	Makeup4
Clothing1	40	13	9	22
Clothing2	16	29	34	14
Clothing3	11	20	9	3
Clothing4	8	4	8	7

Table 1, Cross-tabulation table



p-value = 0.031 Alternative hypothesis: two-sided

Fig. 4 Correspondence analysis results

4. Conclusions

Table 1 shows that many have favorable impressions of combinations between Clothing 1 and Makeup 1 and between Clothing 2 and Makeup 3. Also, correspondence analysis indicated that strong relationships exist between Clothing 1 and Makeup 1 and between Clothing 2 and Makeup 3. These findings are expected to make it easier for those involved in product planning to decide what consumer groups should be targeted for their products.

Correspondence analysis results also revealed that some combinations had strong relationships while others did not. Clothing 1 and Makeup 3 and Clothing 3 and Makeup 4 were shown to not match well. It is presumed that such knowledge of the relationships between clothing and makeup in given combinations will help to map out product marketing strategies. At an apparel retail store, for example, it should become possible to recommend items that customers will like, as well as items that suit them.

On the other hand, the results gained from this research and analysis may be useful for design support. For example, one may get the design elements of products by using the results of factor analysis and cluster analysis. Then, while imagining the exact consumer groups for which products should be developed, one may create such products based on the design elements thus identified.

In this study, we established the method to put sensuous impressions into perspective. In the future, we will refer to the generality of the methods.

5. References and Citations

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